

VNOP

**VERENIGING VOOR NEDERLANDSE
ONTWIKKELINGSPSYCHOLOGIE**

Conference 2021 – Full program

Tuesday, May 18 & Wednesday, May 19

Online

Welcome!

On behalf of the VNOP board, we welcome you to the 2021 VNOP online conference, organized by the University of Amsterdam. We were very much looking forward to welcoming you to Hotel Casa in 2020. Although it is a pity that we had to postpone and change to an online conference because of the corona virus, we are also happy about the possibility of meeting each other online. Because this online conference also has a lot to offer! It is a great opportunity to inform yourself about developmental psychology education and research in the Netherlands. Your contributions about your own research provide a wonderful overview of state-of-the-art research in developmental psychology. The NIP informs us, among other things, about the state of the developmental psychology profession in the Netherlands (Dutch session) and in a teaching workshop we will brainstorm about issues that many of us encounter in teaching developmental psychology. With a pub quiz on Tuesday, we hope to contribute even more to the inspiration, enthusiasm and interest in developmental psychology in the Netherlands!

The organising committee,

Helle Larsen (chair)

Scarlett Slagter

Ana da Silva Pinho

Brenda Jansen

Julie de Vos

Programme at a glance

	09:00	09:15	9:30	9:45	10:00	10:15	10:30	10:45	11:00	11:15	11:30	11:45	12:00	12:15	12:30	12:45	13:00	13:15	13:30	13:45	14:00	14:15	14:30	14:45	15:00	15:15	15:30	15:45	16:00	16:15	16:30	16:45	17:00	17:15	17:30	17:45	18:00
TUESDAY	Walk-in, registration	Openning	Key note: Geertjan Overbeek		B R E A K		Parallel sessions (symposia)				B R E A K	Key note: Daniel Lakens		B R E A K	Parallel sessions (flash talks)		B R E A K	Parallel sessions (symposia)				B R E A K	Pub quiz 														
WEDNESDAY	Walk-in	Parallel sessions (symposia)			B R E A K	Key note: Eveline Crone		B R E A K	General assembly			B R E A K	Poster session		B R E A K	Parallel sessions (symposia, flash talks)			Closing																		

Key note speaker: Geertjan Overbeek

Tuesday 18 May, 9:45 – 10:45 hrs

Key note title: When mummy and daddy get under your skin: How parenting affects children's stress reactivity, self-regulation and disruptive behavior

Key note abstract: Child maltreatment is a widespread, global phenomenon that affects the lives of millions of children. In children who experience chronic maltreatment or highly dysfunctional parenting, stress reactivity is significantly upregulated towards hyperarousal, vigilance, and alertness. This upregulation reflects a physiological survival response that is nevertheless extremely harmful in the long run—increasing children's disruptive behavior and hampering their self-regulatory processes. A crucial question for developmental scientists to consider is: can we undo this process in at-risk children? In this presentation, we will explore theory and research related to this question and consider pioneering evidence that suggests that by implementing known-effective parenting interventions, we can change not only the psychosocial, but also the epigenetic and neurobiological pathways that are responsible for impaired stress reactivity and self-regulation, and the development of disruptive behavior in childhood and adolescence.

About Geertjan Overbeek: Professor of Preventive Youth Care at the University of Amsterdam.

Recent publications:

Eltanamy, H., Leijten, P., Jak, S., & Overbeek, G. (2021). Parenting in times of war: A meta-analysis and qualitative synthesis of war-exposure, parenting, and child adjustment. *Trauma, Violence, & Abuse*, 22(1), 147-160. <https://doi.org/10.1177/1524838019833001>

Fischer, K., Weeland, J., Leijten, P., van den Akker, A., & Overbeek, G. (2020). Current and future perspectives on children's genetic- and endophenotype-based differential susceptibility to parenting. *Journal of Child and Family Studies*, 29(3), 773-779. <https://doi.org/10.1007/s10826-019-01567-6>

Fischer, K., van den Akker, A. L., Larsen, H., Jorgensen, T. D., & Overbeek, G. (2020). Dopamine functioning and child externalizing behavior: a longitudinal analysis of polygenic susceptibility to parenting. *Journal of Developmental and Behavioral Pediatrics*, 41(8), 628-636.



Key note speaker: Daniel Lakens

Tuesday 18 May, 12:45 – 13:45 hrs

Key note title: Towards a more reliable and efficient psychological science

Key note abstract: Problematic research practices, such as publication bias where only positive results are published, have been pointed out in the scientific literature for over half a century. Recently, large scale replication projects have suggested that not all published scientific research is as reliable as we want it to be. Psychological science has been at the forefront of improving research practices, due to a traditionally strong expertise in statistics, combined with an interest in how people change behavior and respond to reward structures. In this presentation I will talk about some of the problematic research practices that have limited knowledge generation in the past, how to recognize them, their consequences for the reliability of research findings, and ongoing efforts towards better research practices that have been developed in the last seven years. I will summarize some easy to implement improvements in designing and analysing experimental studies.

About Daniel Lakens: Associate Professor in the Human-Technology group at Eindhoven University of Technology

Recent publications:

Lakens, D., McLatchie, N., Isager, P., Scheel, A. M., & Dienes, Z. (2020). Improving inferences about null effects with Bayes factors and equivalence tests. *Journals of Gerontology. Series B, Psychological Sciences and Social Sciences*, 75(1), 45-57. <https://doi.org/10.1093/geronb/gby065>

Sorkin, B. C., Kuszak, A. J., Bloss, G., Fukagawa, N. K., Hoffmann, F., Jafari, M., Barrett, B., Brown, P. N., Bushman, F. D., Casper, S. J., Chilton, F. H., Coffey, C. S., Ferruzzi, M. G., Hopp, D. C., Kiely, M., Lakens, D., MacMilan, J. B., Meltzer, D. O., Pahor, M., ... Pauli, G. F. (2020). Improving natural product research translation: from source to clinical trial. *The FASEB Journal*, 34(1), 41-65. <https://doi.org/10.1096/fj.201902143R>

Delacre, M., Leys, C., Mora, Y. L., & Lakens, D. (2019). Taking parametric assumptions seriously: arguments for the use of Welch's F-test instead of the classical F-test in one-way ANOVA. *International Review of Social Psychology*, 32(1), [13]. <https://doi.org/10.5334/irsp.198>



Key note speaker: Eveline Crone

Wednesday 19 May, 10:45 – 11:45 hrs

Key note title: Adolescence as a window of opportunity for contribution to society

Key note abstract: The dynamic brain development that takes place from childhood to young adulthood cooccurs with important changes in how young people relate to themselves and others. During this phase of their lives, young people develop relationships outside of the family context, they develop and alter their self-image, and they make a multitude of choices that have bearing on how they will continue their education, their profession, and their position in society. An important challenge for developmental science is to understand how these dynamic changes provide opportunities for young people to contribute to the societal challenges that the current generation faces.

Models of adolescent brain development have often suggested that the asynchronous development of reward-sensitive limbic and regulatory prefrontal brain regions results in a period of risk for disadvantageous outcomes. These models have often ignored that limbic contributions to rewards also provide opportunities for social adjustment, valuing collaborations and prosocial motivations. In this presentation, I will present data examining adolescence as a window of opportunity for giving, prosocial motivations, and ultimately, contribution to society.

About Eveline Crone: Professor of Developmental Neuroscience in Society at the Erasmus University Rotterdam.

Recent publications:

Crone, E. A., & Fuligni, A. J. (2020). Self and others in adolescence. *Annual Review of Psychology*, 71, 447-469.

Crone, E. A., & Konijn, E. A. (2018). Media use and brain development during adolescence. *Nature Communications*, 9(1), 1-10.

Crone, E. A., & Steinbeis, N. (2017). Neural perspectives on cognitive control development during childhood and adolescence. *Trends in Cognitive Sciences*, 21(3), 205-215.



Detailed program Tuesday 18 May

9:00 – 9:30	Walk-in, registration	<i>Main room</i>
9:30 – 9:45	Opening	<i>Main room</i>
9:45 – 10:45	Key note Geertjan Overbeek	<i>Main room</i>
	When mummy and daddy get under your skin: How parenting affects children's stress reactivity, self-regulation and disruptive behavior	
10:45 – 11:00	Break	
11:00 – 12:15	<i>Parallel sessions (symposia, NIP) in breakout rooms (BOR)</i>	
	S1. Biological approaches to psychological development in childhood and adolescence: Stress reactivity and methylation	<i>BOR S1</i>
	S2. Anxiety and depression development: the role of parents' emotions, hyperarousal, attention bias, and emotion regulation	<i>BOR S2</i>
	S3. Susceptibility to peer influence in adolescence	<i>BOR S3</i>
	NIP Informatievoorziening over laatste ontwikkelingen: Het beroep Kinder- en Jeugdpsycholoog in beweging	<i>BOR NIP</i>
12:15 – 12:45	Break (lunch)	
12:45 – 13:45	Key note Daniel Lakens	<i>Main room</i>
	Towards a more reliable and efficient psychological science	
13:45 – 14:00	Break	
14:00 – 15:00	<i>Parallel sessions (flash talks) in breakout rooms (BOR)</i>	
	<i>F1. Children, Parenting</i>	<i>BOR F1</i>
	1. S.B. Geeraerts: Getting ready for parenthood: A longitudinal study on the parent-adolescent relationship as a foundation for feelings and cognitions regarding parenting	
	2. Sanne de Vet: Child care in times of COVID-19: Predictors of distress in Dutch children and parents when re-entering out-of-home child care after a 2-month lockdown	
	3. Hend Eltanamly: Parenting as it's lived: Moment-to-moment stressors and parental self-efficacy among refugee parents in the Netherlands	
	4. Nil Horoz: Children's behavioral, emotional, and social development throughout elementary school: Do individual-level parental education and school-level parental education matter?	
	5. Mariëlle Osinga: Father Absence and Academic Engagement among Curaçaoan and Dutch Adolescents and Young Adults	

F2. Cognition, mental health

BOR F2

1. Reinout Wiers: Urban mental health and developmental psychopathology
2. Jorien van Hoorn: Social influence on impulsive choice in adolescents and young adults with attention deficit/hyperactivity disorder
3. Jessica Schaaf: Developmental effects on decision confidence and learning from positive and negative outcomes
4. Jan Boom: Development of the idea of chance
5. Bonnie Brett: Studying probiotics and cognition in West Africa: Findings and lessons on cross cultural research
6. Susanne de Mooij: Adapt to improve: Post-error slowing in a large scale online learning environment

F3. Social interaction A

BOR F3

1. Stathis Grapsas: Climbing up or falling down: An electromyography experiment on status sensitivity in narcissistic children and their parents
2. Matteo Giletta: Peer victimization experiences and gene expression profiles during adolescence
3. Tessa Kaufman: Are victims of bullying primarily social outcasts? Person-group dissimilarities in social, behavioral and physical characteristics as predictors of victimization
4. Vasiliki Kentrou: Co-occurring mental health conditions and potential misdiagnoses in men and women with late-diagnosed Autism Spectrum Disorder
5. Stefania Vacaru: Five-year-olds' facial mimicry following social ostracism is modulated by attachment security
6. Ilse van de Groep: Social evaluation, aggression regulation and psychopathic traits in persistent and desistant antisocial and typically developing young adults

F4. Culture SES

BOR F4

1. Shuang Su: Is smartphone addiction a "real" addiction? A qualitative investigation
2. Willem Frankenhuis: Hidden Talents in Harsh Conditions
3. Fangyuan Li: The Autism-Spectrum Quotient Short Form (AQ-Short) in China and the Netherlands: A cross-cultural comparison
4. Laura Doornkamp: Gender and ethnicity bias in teachers' grading
5. Yixin Tang: Children's domain-specific self-evaluations and global self-worth: A meta-analysis
6. Tessa van de Rozenberg: Gender and Sexuality Messages in Dutch Textbooks
7. Jellie Sierksma: When helping hurts: Children learn stereotypes from observing intergroup helping behavior

15:00 – 15:15 Break

15:15 – 16:30 *Parallel sessions (symposia) in breakout rooms (BOR)*

S4. Practicing what makes you feel good: The interplay between motivation and performance in STEM	<i>BOR S4</i>
S5. A developmental perspective on forensic psychopathology: New insights on assessment, profiling and treatment	<i>BOR S5</i>
S6. Teacher-student interactions and its effect on children's executive function	<i>BOR S6</i>
S7. How meta-analysis can (and cannot) improve our understanding of parenting and child development	<i>BOR S7</i>
16:30 – 16:45 Break	
16:45 – 18:00 Pub quiz	<i>Main room</i>

Detailed program Wednesday 19 May

9:00 – 9:15	Walk-in, registration	<i>Main room</i>
9:15 – 10:30	<i>Parallel sessions (symposia) in breakout rooms (BOR)</i>	
	S8. The role of motivation in aggression and status among peers	<i>BOR S8</i>
	Teaching intervention: problem-based learning	<i>BOR Teaching</i>
	S9. An integrative approach to prosocial development in the first two decades of life: Combining biological, neuroimaging, and environmental perspectives	<i>BOR S9</i>
	S10. Peer difficulties in youth with and without mild-to-borderline intellectual disabilities: Examining underlying factors and intervention effects	<i>BOR S10</i>
10:30 - 10:45	Break	
10:45 – 11:45	Key note Eveline Crone Adolescence as a window of opportunity for contribution to society	<i>Main room</i>
11:45 – 12:00	Break	
12:00 – 13:00	General assembly	<i>Main room</i>
13:00 – 13:45	Break (lunch)	
13:45 – 14:45	<i>Poster session in breakout rooms (BOR)</i>	
	P1. Bonnie Brett: Birth-related pain, fatigue, and perceived trauma: Can regular maternal-infant skin-to-skin contact influence healing after delivery?	<i>BOR P1</i>
	P2. Shannon Yuen: Functioning within family systems and its relation with emotional functioning in deaf or hard-of-hearing preschool children	<i>BOR P2</i>
	P3. Timothy Houtman: Gut Microbes and the Development of BMI in the First 12 Years of Life	<i>BOR P3</i>
	P4. Jana Runze: A bivariate behavioural genetics model of sleep and cortisol in middle childhood	<i>BOR P4</i>
	P5. Emma Bolhuis: The biological embedding of a fast life-history strategy: telomere erosion and epigenetic aging as potential mediators between attachment insecurity, puberty onset and transgressive behavior.	<i>BOR P5</i>

	P6. Nil Horoz: The moderating role of parental education and school level education on the effect of an universal preventive intervention on children's internalizing and externalizing problems	<i>BOR P6</i>
	P7. Kayla Green: Emotional reactivity and wellbeing of adolescents during the COVID-19 pandemic	<i>BOR P7</i>
	P8. Judith van de Wetering: Can we promote adolescents' pro-environmental behavior by harnessing their autonomy motive? – A controlled experiment	<i>BOR P8</i>
	P9. Martina Zaharieva: Developing and validating eye-tracking measures of attention and emotion regulation in infancy: A longitudinal study	<i>BOR P9</i>
	P10. Ingmar Visser: The Habituation Project, Part I: Design choices in infant habituation: A crowd-sourced systematic review and meta-analysis	<i>BOR P10</i>
	P11. Elisabeth de Moor: Zooming in on the secondary school Transition: adolescent reasons for school choice	<i>BOR P11</i>
	P12. Sophie Sweijen: Adolescents' prosocial actions during the COVID-19 pandemic: A longitudinal daily-diary study	<i>BOR P12</i>
14:45 - 15:00	Break	
15:00 – 16:15	<i>Parallel sessions (symposia, flash talks) in breakout rooms (BOR)</i>	
	S11. Social anxiety in adolescence: Exploring important symptoms observed in socially anxious youth and current treatment efforts	<i>BOR S11</i>
	S12. Positive developmental psychology: Towards a better understanding of well-being in individuals	<i>BOR S12</i>
	S13. Children's social adjustment and parenting	<i>BOR S13</i>
	S14. Fathers are Parents Too!	<i>BOR S14</i>
	<i>Flash talks: F5. Social interaction B</i>	<i>BOR F5</i>

1. Iris Koele: Neural processing of performance feedback in the social context of peers across adolescence
2. Andrik Becht: Beyond the average brain: Individual differences in social brain development are associated with friendship quality
3. Reep Uysal: The relation between social anxiety and the perception of likability in adolescents: A longitudinal study
4. Martina Zaharieva: Validating the Baby FaceReader for facial expression analysis during face-to-face interaction in 3- to 4-month-old infants
5. Jiemiao Chen: Gaze avoidance during face-to-face conversations in socially anxious individuals: the effect of intimacy and conversational role
6. Maud Hensums: Social goals and gains of adolescent bullying: A meta-analysis
7. Andrea Gradassi: High status peers promote prosocial behavior: experimental evidence from high school social networks

16:15 – 16:30 Closing

Main room

Tuesday 18 May	9:30 - 9:45
Opening (plenary)	Main room

Opening by the organising committee

Tuesday 18 May	9:45 - 10:45
Key note (plenary)	Main room

Key note title: When mummy and daddy get under your skin: How parenting affects children’s stress reactivity, self-regulation and disruptive behavior

Speaker: Geertjan Overbeek

Key note abstract: Child maltreatment is a widespread, global phenomenon that affects the lives of millions of children. In children who experience chronic maltreatment or highly dysfunctional parenting, stress reactivity is significantly upregulated towards hyperarousal, vigilance, and alertness. This upregulation reflects a physiological survival response that is nevertheless extremely harmful in the long run—increasing children’s disruptive behavior and hampering their self-regulatory processes. A crucial question for developmental scientists to consider is: can we undo this process in at-risk children? In this presentation, we will explore theory and research related to this question and consider pioneering evidence that suggests that by implementing known-effective parenting interventions, we can change not only the psychosocial, but also the epigenetic and neurobiological pathways that are responsible for impaired stress reactivity and self-regulation, and the development of disruptive behavior in childhood and adolescence.

Tuesday 18 May	11:00 – 12:15
Symposium (parallel session)	Breakout room S1

Symposium title: Biological Approaches to Psychological Development in Childhood and Adolescence: Stress Reactivity and Methylation

Chair: Luc Goossens

Discussant: Luc Goossens

Symposium abstract: A basic assumption in research on children and adolescents is that environmental stressors, such as daily stress, non-supportive parenting, or insecure attachment, are associated with methylation, a particular form of less effective gene functioning, in stress-related genes. This genetic impairment, in turn, is associated with higher levels of stress reactivity and higher levels of problem behavior. The present symposium tries to examine these ideas from three complementary perspectives. The first study demonstrates that daily hassles in early adolescence are associated with greater stress reactivity when confronted with a stressful situation, but this association is more pronounced if the glucocorticoid (or cortisol) receptor gene shows a higher degree of methylation. The second study, again on early adolescents, shows that more supportive parenting is associated with a reduction in attachment-related anxiety, but only if stress reactivity to an objective stressor is more pronounced. The third study describes the design of an intervention project intended to reverse the negative impact of a stressful parenting environment by reducing gene methylation and problem behavior using well-established parent training programs. The discussant, a recognized expert on the development of problem behaviors in adolescence and its genetic background, will try to integrate the findings of the three studies and spell out their implications for the current status of the basic explanatory mechanism that links both genetics and the social environment, through increased sensitivity to stress, to the development of problem behaviors in children and adolescents.

Speakers and presentations:

Viktoria Chubar: Glucocorticoid Receptor Gene (NR3C1) DNA Methylation Moderates The Associations of Cortisol Stress Reactivity and Self-Reported Level of Daily Hassles

The negative impact of stress during development is known to increase vulnerability to psychopathology in part through alterations in the cortisol stress response. Epigenetic mechanisms — more specifically DNA methylation (DNAm) — in the glucocorticoid receptor gene (NR3C1) might be a plausible mechanism through which stress can contribute to such alterations. However, the relation between the level of daily stress, cortisol stress response, and DNAm in NR3C1 in adolescence has not been well studied yet.

In the current study, we examine links between self-reported level of daily hassles in adolescents, stress response system functioning (i.e., cortisol reactivity and recovery) during the Trier's Social Stress Test for children (TSST-M) and DNAm status in the NR3C1 gene.

The participants (11-12 years old; N = 101) were drawn from MIND (Methylation IN Development), a longitudinal, population-based study. Cortisol stress reactivity and recovery during the TSST-M were determined by eight cortisol saliva samples before and after the stress induction. The level of DNAm in the NR3C1 gene (1F promoter region) was measured by pyrosequencing performed on

bisulfite-treated DNA.

Our results show that DNAm at functionally relevant sites (NGFI-A-binding site) of the NR3C1 gene moderated the association between cortisol stress reactivity and self-reported level of daily hassles (overall model: $p = .01$, $R^2 = .20$; interaction: NGFI-A x Daily Hassles: $p = .01$).

These findings support the hypothesis that epigenetic modifications are a plausible mechanism that is linked to daily stress and to changes in cortisol stress response and provide important insights for understanding vulnerability to stress-related psychopathology.

Melisse Houbrechts: Parental Support and Insecure Attachment Development: Cortisol Reactivity and Recovery in Response to Stress as Moderators

Accumulating research demonstrates that attachment development is only partially determined by environmental influences such as parental support. Individual differences in cortisol reactivity and recovery might reduce the likelihood that parental support is associated with (in)secure attachment development. To test this hypothesis, we conducted a one-year longitudinal study with two waves in which 101 early adolescents (56% girls, $M_{age} = 11.15$, $SD_{age} = 0.70$) participated. Self-reported attachment anxiety, avoidance and parental support were measured at baseline and one year later. Cortisol reactivity and recovery were measured during the Trier Social Stress Test at Wave 2. Piece-wise growth curve modelling was used to estimate cortisol reactivity and recovery slopes. Wave 2 attachment was regressed on support, cortisol reactivity/ recovery, and their interaction while controlling for Wave 1 attachment. Both cortisol reactivity and recovery moderated the effect of parental support on anxious attachment development. Parental support reduced the probability that children's attachment anxiety increased over time, but only when cortisol reactivity was low (Support x Reactivity $\hat{\beta}^2 = 0.38$, $t = 3.64$, $p < .01$), or when cortisol recovery was low (Support x Recovery $\hat{\beta}^2 = -0.36$, $t = -2.50$, $p = .02$). No moderation effects were found for attachment avoidance.

Geertjan Overbeek: When Mummy and Daddy Get Under Your Skin: A New Look at How Parenting Affects Children's Stress Reactivity and Disruptive Behavior

This presentation describes the set-up, design, and planned data collection of the NWO VICI-funded JEOPARDY study, a longitudinal-experimental study among 650 at-risk children (aged 12–14 months) and their families in the Amsterdam SARPHATI cohort. The project is unique in that it pairs (epi)genetic and physiological data with longitudinal-observational methods in a 3-year, 6-wave prospective study and with randomized controlled trials of VIPP-SD and the Family Check-Up program in a so-called “stepped care” intervention paradigm.

Child maltreatment is a widespread phenomenon that affects many children. In children who experience chronic maltreatment, stress reactivity is significantly upregulated towards hyperarousal, vigilance, and alertness. This upregulation reflects a physiological survival response that is nevertheless extremely harmful in the long run, increasing children's disruptive behavior and jeopardizing their further development.

Based on preliminary findings from several pilots, we hypothesize that dysfunctional parenting predicts methylation (gene silencing) in a glucocorticoid gene pathway responsible for heightened stress reactivity, which leads to disruptive behavior. However, we hypothesize that it is also possible to “flip the methylation switch” in this process. By improving parenting with known-effective parenting interventions, the previously methylated glucocorticoid gene pathway that is responsible for impaired stress reactivity can become demethylated. Demethylation, in turn, can lead to improved stress reactivity that diminishes disruptive behavior.

If successful, this project will show how experimentally enriched parenting gets under children's skin, leading to (heritable) changes in gene expression in children, that improve not only their stress reactivity and disruptive behavior but perhaps also that of their offspring.

Tuesday 18 May	11:00 – 12:15
Symposium (parallel session)	Breakout room S2

Symposium title: Anxiety and depression development: the role of parents' emotions, hyperarousal, attention bias, and emotion regulation.

Chair: Wieke de Vente

Symposium abstract: Anxiety disorders and depression are highly comorbid and the most prevalent forms of mental disorders. These disorders have their onset in childhood and adolescence. A better understanding of the mechanisms playing a role in the development of anxiety disorders and depression is essential for designing effective prevention and intervention strategies for children at risk for/with these disorders.

This symposium presents four studies on potential core mechanisms playing a role in the early development of anxiety disorders and depression involving physiological (autonomic arousal) and cognitive (attention bias, emotion regulation) factors. Paper 1 examines whether parents' fearful temperament predicts infant's autonomic hyperarousal, measured through heart rate and heart rate variability, and whether infant's hyperarousal subsequently predicts fearful temperament in the child. In Paper 2, associations between parents' anxiety and depression and infants' and parents' attention bias are assessed, the latter measured through attention to dynamic negative and positive facial expressions via eye-tracking in both parents and infants. In Paper 3, associations between parents' anxiety and depression and children's arousal to emotional expressions are assessed, the latter measured using pupil dilation to dynamic negative and positive facial expressions in 8-12 year old children. In Paper 4, associations between self-regulation skills and strategies and anxiety and depression are examined in 11-18 year old adolescents.

Together, these studies identify early mechanisms involved in anxiety and depression development from infancy to adolescence. Jointly, they shed light on the interplay between predisposition and environment in the emergence of anxiety and depression.

Speakers and presenters:

Wieke de Vente: Intergenerational transmission of anxiety: linking parents' temperament to infant autonomic hyperarousal.

The aim of this study was to assess autonomic hyperarousal in the intergenerational transmission of fearful temperament and thereby shed more light on the developmental pathway from fearful temperament to anxiety disorder.

We assessed whether parents' temperament predicted infant hyperarousal and whether infant hyperarousal predicted their subsequent fearful temperament. Infants (N = 128; age = 4 months) did a novel stimuli task (exposure to visual, olfactory, and acoustic stimuli and an unknown male), and a noise task (exposure to a repeated acoustic stimulus). Heart rate (HR) and Heart rate variability (HRV) were measured during baseline, stimuli, and recovery. Parents' temperament was measured before the child was born using a questionnaire. Child fearful temperament was measured at 4 months, 1 year, and 2,5 years using observations.

Parents' fearful temperament predicted a higher HR in their infants during the noise task. Parents' negative affectivity and its' individual subscales (fear, frustration, sadness, discomfort) also

predicted a higher HR in their infants. Other parental temperament factors were not significantly related to infant HR. Infants' higher HR reactivity to novel stimuli and diminished HR recovery following these stimuli were related to a more fearful temperament. No significant findings were obtained for HRV.

Results suggest that autonomic hyperarousal is a risk factor for a fearful temperament, which is transmitted from parents to their children. Autonomic hyperarousal may not be a specific risk factor to a fearful temperament though; it may be a risk factor for negative affectivity in a broader sense.

Cosima Nimphy : Attention to Negative Emotion in Parents and Infants: The Role of Parental Anxiety and Depression

Parent-to-child transmission of attention biases to threat has been proposed to be a causal mechanism for family aggregation of anxiety. This study is the first to explore the direct link between infants' and parents' attention to dynamic facial expressions of anger, fear, and sadness as compared to happy faces, and to examine the links of parental anxiety and depression to infants' attention using eye-tracking.

Method: We tested 119 infants divided into three age groups: 5-to-7-month-olds ($n = 72$, $Mage = 6.09$) 11-to-13-month-olds ($n = 78$, $Mage = 12.08$), and 17-to-19-month-olds ($n = 69$, $Mage = 17.88$) and their parents ($n = 232$). We measured infants' and parents' attention to dynamic negative and positive facial expressions via eye-tracking. Both parents reported their anxiety, and depression using questionnaires.

Results: The preliminary findings show overall significant differences between infants' and parents' attention biases to negative emotions. In contrast to a fear-specific negativity bias observed in infants across all age groups, parents showed more attention to angry and sad, but not fearful expressions. The findings on the specificity of the associations between parents' depression/anxiety and infants' and parents' attention will be presented in the symposium.

Evin Aktar : The links between pupillary reactivity to negative faces, and depression and anxiety in the family

Cognitive-behavioral models of intergenerational psychopathology transmission emphasize physiological arousal as a central mechanism in parent-to-offspring transmission of depression and anxiety. Earlier evidence has shown specific associations between child pupillary responses to fearful faces and maternal anxiety, as well as child pupillary responses to sad faces and maternal depression.

The current study aimed to extend our understanding of the specific links between pupillary responses to negative emotional facial expressions, and depression and anxiety in the family. In a sample of 8-to-12-year-old children and their parents, we studied the links between pupillary reactivity to negative (angry, fearful and sad vs. happy) facial expressions, and depression and anxiety. Child pupil responses to dynamic negative emotional stimuli were measured using eye-tracking. Both parents of participating families reported their own and their child's depression and anxiety. Based on earlier evidence, we expected that children with more anxious or depressed parents would show altered pupillary reactivity to negatively valenced emotional facial expressions (specifically to fear and sad respectively). The results will be presented and discussed during the symposium.

Leentje Vervoort: Anxiety and depressive symptoms in adolescents: the use of emotion regulation strategies and skills.

Emotion regulation difficulties are associated with a broad range of psychological problems, including anxiety and depression in adolescents. Emotion regulation is traditionally studied from one of two approaches. The strategies approach describes ER as range of processes that

influences the type of emotion an individual has, its intensity, its timing, and how it is experienced and expressed, and focuses on the strategies that one uses to influence the process of emotion generation and its manifestation in behavior. The skills approach describes ER as typical, dispositional ways in which one deals with one's emotions, and focuses on the skills that one needs to understand, accept and tolerate one's emotions. While there is ample evidence on the role of maladaptive ER strategies (i.e. giving up, rumination, self-devaluation) in anxiety and depression, less is known on how difficulties with ER skills (i.e. emotional awareness, acceptance of difficult emotions, self-support) are linked with emotional problems. We will present results of a study investigating ER skills and strategies and their relation with anxiety and depression symptoms, in a large community sample of 11-18 year old adolescents.

Tuesday 18 May	11:00 – 12:15
Symposium (parallel session)	Breakout room S3

Symposium title: Susceptibility to peer influence in adolescence

Discussant: Anna van Duijvenvoorde

Symposium abstract: Adolescence is often characterized by a heightened susceptibility to peer influence as well as by an increased engagement in risky behavior. The studies presented in this session apply a decision-making framework to shed light on these developmental patterns. In the first presentation, by Simon Ciranka (Max Plank Institute, Berlin), the focus will be on the role of uncertainty in adolescent decision-making, viewing social influence from the perspective of Bayesian updating. The second presentation, by Scarlett Slagter (University of Amsterdam) concentrates on aspects that affect how adolescents perceive and seek out social information, explicating when and whom adolescents learn from. Thus, in this study, social influence is perceived as the outcome of a search strategy. In the third presentation, by Evelien Hoeben (NSCR, Amsterdam), social influence is viewed as a process occurring at the conversational level, breaking down influence into the role of the receiver, the sender, verbal and nonverbal communication, and subsequent decision-making. All three presented studies apply experimental designs, extended with computational modelling (first presentation), sociometric data (second presentation), and observational techniques (third presentation). The session will conclude with a discussion of the peak in susceptibility to peer influence during adolescence, led by discussant Anna van Duijvenvoorde (Leiden University).

Speakers and presenters:

Simon Ciranka: Social influence under risk and uncertainty during adolescence

Social learning is one of the means to achieve the goal of independence in society, one of the major milestones of adolescence. It is commonly argued that adolescents are therefore equipped with a special sensitivity for social learning. This adaptive nature of adolescent social sensitivity notwithstanding, the same social sensitivity comes at the cost that risky behaviours such as smoking, drinking or reckless driving are acquired during adolescence via social channels – sometimes with lifelong consequences. In order to prevent adolescent's propensity to take risks from escalating, we, therefore, need to understand in which contexts social influence is most likely to occur. One starting point to understand the contextual nature of social influence is the observation that social influence is greater when individuals are more uncertain of how to decide. To investigate uncertainty as contextual modulator of social influence, we introduce an experimental paradigm which enables us to vary the degree of uncertainty about decision outcomes and formulate a computational model, understanding social influence as Bayesian-updating wherein uncertainty constitutes a mechanism of social influence. We test 155 subjects (aged: 10-26, mean= 15.9) in order to investigate how social influence changes with age and varying uncertainty. We find that social influence follows similar principles for all age-groups tested. Subjective uncertainty and social influence decrease linearly with age. In the light of the peaks in adolescent risk-taking in real life, we argue that more attention needs to be paid on what the uncertainties are which make adolescents so susceptible to peer influence.

Scarlett Slagter: Adolescents search for social information under uncertainty

Adolescence is a period of emerging independence, in which adolescents face difficult decisions, including those that involve risk for health and well-being. Previous research suggests that learning from others might be a prominent strategy of adolescents to inform these difficult decisions. However, there is a gap in the literature that addresses the active role adolescents may have in gaining information about others' behaviour to inform their decisions (i.e. social information search). Here, we investigate when and how much social information adolescents search before making decisions under risk and ambiguity, using a novel social search paradigm. In this paradigm adolescents were able to reveal real information about their classmates' choices before making a decision. Our two experiments suggest that social information search can be broken down in two independent decisions to initiate and continue search. Several factors motivated initiation of search including: 1) the difficulty of the choice, 2) uncertainty about the outcome, and 3) the magnitude of the reward at stake. Search took generally longer, when adolescents faced information not in line with their initial preference. Finally, we observed that adolescents used the sampled social information to inform their risky-choice behaviour. Taken together these results provide novel insights in the dynamics of peer influence in adolescence, and stress the importance of treating adolescents not only as receivers, but as active agents searching for social information.

Evelien Hoeben: Situational peer influence and risky decision-making in adolescence

Most deviant acts committed by adolescents are carried out with peers. Despite abundant evidence that peer influence is a driving force in adolescent risk-taking, it remains unclear how adolescents influence each other's behavior. What do peers do or say to encourage or discourage risky decision-making? Who are most inclined to stimulate risky decision-making of their friends? To answer these and related questions, we need information about adolescents' decision-making and adolescents' interactions with peers as they unfold. Gaining this information requires a microsocial experimental research design and in-depth conversation analysis. In this burgeoning research project, I will break down 'peer influence' into specific verbal and nonverbal cues. I will assess these cues by observing adolescents' real-time group interactions while they play a videogame. In this game, participants make decisions under time pressure facing risk. Participants play the game in groups of two to three peers, who can give advice on what to do. These interactions are recorded and coded for conversational cues, distinguishing content, direction ('what is said'), style of the message ('how it is said'), and the source ('who says it'). Participants (489 individuals, aged 11 to 22) were recruited from middle schools, high schools and a public university in New York State (USA). The findings will show what type of cues from what type of peers are most likely to lead to risky decision-making. These insights will constitute a significant step forward for our understanding of peer influence and will inform policies targeting adolescent rule-breaking behavior.

Tuesday 18 May	11:00 – 12:15
NIP: Informatievoorziening over laatste ontwikkelingen gevolgd door discussie (parallel session) Dutch only!	Breakout room NIP

Title: Het beroep Kinder- en Jeugdpsycholoog in beweging

De Kinder- en Jeugdpsycholoog NIP (postmasterniveau) bestaat al 25 jaar. In 2015 heeft het NIP VWS verzocht het register als basisberoep op te nemen in de wet BIG, naast de GZ-psycholoog (en sinds 2020 de orthopedagoog-generalisten). Tot nu toe zonder succes. Het recente Advies Beroepenstructuur psychologische zorg (2020) pleit voor samenvoeging van de beroepen GZ-psycholoog en K&J-psycholoog tot één BIG-basisberoep: gz-psycholoog generalist. De opleidingseisen van de GZ-psycholoog worden dan verbreed met die van de K&J-psycholoog. Wat betekent dit voor de toekomst van de ontwikkelingspsychologie? Wat zijn kansen en bedreigingen?

Doelgroep: hoogleraren en docenten ontwikkelingspsychologie die belangstelling hebben voor de positie van de ontwikkelingspsychologie in het (postmaster) beroepengebouw van psychologen.

Tuesday 18 May**12:45 – 13:45****Key note****Main room**

Key note title: Towards a more reliable and efficient psychological science

Speaker: Daniel Lakens

Key note abstract: Problematic research practices, such as publication bias where only positive results are published, have been pointed out in the scientific literature for over half a century. Recently, large scale replication projects have suggested that not all published scientific research is as reliable as we want it to be. Psychological science has been at the forefront of improving research practices, due to a traditionally strong expertise in statistics, combined with an interest in how people change behavior and respond to reward structures. In this presentation I will talk about some of the problematic research practices that have limited knowledge generation in the past, how to recognize them, their consequences for the reliability of research findings, and ongoing efforts towards better research practices that have been developed in the last seven years. I will summarize some easy to implement improvements in designing and analysing experimental studies.

Tuesday 18 May	14:00 – 15:00
Flash talks (parallel session)	Breakout room F1

Topic(s): Children, Parenting

1. Sanne Geeraerts: Getting Ready for Parenthood: A Longitudinal Study on the Parent-Adolescent Relationship as a Foundation for Feelings and Cognitions regarding Parenting

It is widely believed that parenting practices are transmitted over generations. However, previous studies have mainly looked at generation 1 (G1) parenting during one moment in time, even though parenting changes profoundly over the course of adolescents' development. Moreover, the role of G1 and G2 fathers has been largely neglected and few studies incorporated both G2 parents and nonparents. In the current study, we model the development of G1 parent (both mother and father) – G2 adolescent relationship characteristics (i.e., support, negative interactions and dominance) from middle adolescence to late adolescence (age 13 to 18 years). Second, we examine relations between the development of parent-adolescent relationship characteristics and feelings of parental self-efficacy and parental care system activation in young adulthood (age 24 to 30 years). Parental self-efficacy refers to beliefs about being successful as a parent, whereas the parental care system comprises mechanisms that motivate adults to protect and nurture children. Lastly, we examine whether associations are different for G2 parents vs. nonparents. The sample consists of $n = 1358$ adolescents at wave 1, of which 201 individuals are currently a parent. Adolescents and parents reported on the level of support, dominance and negative interactions. In young adulthood, a questionnaire assessing parental self-efficacy and parental care system activation was administered. We conduct growth curve modelling to examine the development of parent-adolescent relationship characteristics. The intercept and slope are used to predict self-efficacy and parental care system activation. With multigroup analyses we examine whether associations are different for parents vs. nonparents.

2. Sanne de Vet: Child Care in Times of COVID-19: Predictors of Distress in Dutch Children and Parents When Re-Entering Out-Of-Home Child Care After a 2-Month Lockdown

In the spring of 2020, the Dutch government decided to close all child care centers to minimize the spread of the SARS-CoV-2 virus that causes the respiratory disease COVID-19. Halfway through May, the transmission dynamics allowed for the re-opening of child care centers. However, children and parents had been at home for almost 2 months by then. We know from attachment theory and earlier studies that separations from familiar caregivers and transitions into child care settings can cause distress, for both children and their parents. The unique situation due to the lockdown compelled children and parents to be away from and to re-enter the child care center and this might have evoked negative emotions. In this paper we aimed to answer (1) whether Dutch children 0-4 years old and their primary caregiver experienced distress in the first two weeks following their return to the child center after a 2-month lockdown and (2) what factors accounted for individual differences in child and parental distress. We selected relevant predictors at the child, parental, and child care level. Data were collected in August and September 2020 via an online survey, which was completed by 694 parents. Results will be discussed during the Flash Talk. More knowledge on possible predictors may guide policy makers in comparable future situations and may help to identify children and parents who are most in need of support when re-entering center-based child care after long periods of absence.

3. Hend Eltanamly: Parenting as it's lived: Moment-to-moment stressors and parental self-efficacy among refugee parents in the Netherlands

Resettled refugee parents might struggle with a sense of loss, not feeling at home, discrimination and language difficulties which demand constantly deciphering novel situations. This may reduce refugee parents' feelings of trust in their environments. These feelings might hamper parents' self-efficacy, which has been found to predict parenting practices. Most work on refugee parents captures snapshots of people's lives, losing valuable insights that can be learned from the fluctuations and interplay between post-migration stressors and parenting in daily life. In the present study, we test whether experiences of post-migration stressors predict reductions in feelings of parental self-efficacy, and whether tailored verbal feedback can be used to boost refugee parents' self-efficacy.

We used experience sampling where parents reported on momentary questionnaires, 10 times per day for 15 days on experiences of post-migration stress and feelings of parental self-efficacy. Our final sample included 73 refugee parents in the Netherlands. We will test whether exposure to post-migration stress predicts later reductions in parental self-efficacy. In addition, using a multiple baseline micro-intervention design, we test whether tailored verbal feedback improves parental self-efficacy.

In line with our preregistration (<https://osf.io/4m37p>), we will analyze the data using dynamic structural equation modeling during January-March. This study will improve our understanding of the impact of micro-stressors (e.g., alienation, discrimination, and language difficulties) on refugee parents' self-efficacy, and will inform clinicians and intervention workers of the viability of boosting parental self-efficacy among refugee parents.

4. Nil Horoz: Children's behavioral, emotional, and social development throughout elementary school: Do individual-level parental education and school-level parental education matter?

Background: Parental education may be associated with children's behavioral, emotional, and social development. This impact is especially pronounced during the elementary school period. Yet, research on the longitudinal effects of individual- and school-level parental education covering the entire elementary school period is scarce. This study examined the effect of individual-level parental education and the aggregated school-level parental education on children's behavioral, emotional and social development across the entire elementary school period. Method: 611 children were annually followed from first to sixth grade. Children's behavioral, emotional, and social problem development were assessed by teacher-reports and peer-nominations. Parental education levels were based on the highest completed education level of the mother and father. School level education was based on the percentage score of all children with low educated parents per school. Results: Results from multi-level growth models generally showed that low parental education, either at the individual, school-, or both levels, was associated with higher levels of behavioral, emotional and social problems. Most effects were found to be present already in first grade and to persist across elementary school. Conclusion: The effects of low parental education are already apparent in first grade and mostly remain stable throughout the elementary school period. Schools are incapable of compensating the difficulties related to individual- and school-level low parental education. Interventions must be implemented at both levels before or during first grade to prevent enduring negative consequences for children's development and thereby the possible intergenerational transmission of inequalities.

5. Mariëlle Osinga: Father Absence and Academic Engagement among Curaçaoan and Dutch Adolescents and Young Adults

From an evolutionary perspective, father involvement in child rearing has been necessary for the survival and social development of their children. Consequently, father absence may be detrimental

for child educational and other outcomes, at least in Western societies where father absence is considered deviant and social networks that replace the father are rare. Yet, much is unclear about processes through which father absence affects child development, and why some adolescents and young adults are more negatively affected by their father's absence than others are. The present study investigated effects of father absence on academic engagement, which evaluates behaviors and emotions that predict student performance and informs about achievement mechanisms. In doing so, we included a large sample of students from Curaçao (N = 564, 62% female, M age = 18.30) and the Netherlands (N = 652, 57% female, M age = 17.42), who differed substantially in the prevalence of father absence (63% respectively 27%). Because measurement invariance on the scalar level was not supported, we estimated regression models of behavioral and emotional engagement and disaffection for both cultural and sex groups independently. We included SES and household composition to the full-hypothesized model, and corrected for nested data at the school and class level. Studying consequences of father absence enriches our knowledge of what it might mean to grow up without a father. Doing so for young people across cultures and gender has important practical value by contributing to better understand and, where required, improve the health and wellbeing of father-absent young people with different demographic characteristics.

Tuesday 18 May	14:00 – 15:00
Flash talks (parallel session)	Breakout room F2

Topic(s): Cognition, mental health

1. Reinout Wiers: Urban Mental Health and Developmental Psychopathology

UvA established a center on urban mental health (UMH). UMH aims to unravel new pathways to improve urban mental health that takes into account the complexities and dynamics of mental health problems and mental health disorders in an urban environment. State-of-the-art complexity science is used as backbone to understand and intervene upon the complexities and dynamics of mental health problems in an urban environment, with special attention to common mental health problems and common mental health disorders. Research is aimed at understanding why and when some groups or individuals thrive in an urban setting, whereas other individuals are vulnerable and develop mental problems. I will introduce the center with an emphasis on relevance for developmental psychopathology."

2. Jorien van Hoorn: Social influence on impulsive choice in adolescents and young adults with attention deficit/hyperactivity disorder

Impulsivity is a core feature of attention-deficit/hyperactivity disorder (ADHD). Previous work that employed the temporal discounting task to assess ADHD-related impulsivity suggests that children and adolescents with ADHD prefer a smaller-immediate reward over a bigger-delayed reward. However, ADHD-related impulsivity often declines with age, and it is unclear if this differential preference remains into young adulthood. In addition, real-life decision-making often happens in a social context, and peers have a major influence on decisions. When healthy young adults observe peer responses that favor the smaller-immediate reward, their own decisions also become more impulsive. The aim of the current study was to examine temporal discounting and the effects of social influence in male adolescents and young adults (ages 13-23; N = 115) with and without ADHD. We utilized a temporal discounting task in which participants received manipulated peer feedback on a subset of decisions. Results yielded no differences in baseline temporal discounting between youth with and without ADHD. However, we found a significant interaction between type of peer feedback (impulsive or non-impulsive) and impulsive choice, such that impulsive peer feedback did not alter decision-making, while non-impulsive peer feedback resulted in decreased impulsive choices. This suggests that youth with and without ADHD were more responsive to non-impulsive peer feedback than impulsive peer feedback on their choice behavior. Our findings implicate that peer feedback can lead to decreases in impulsive choice in youth with and without ADHD and may be a promising component in interventions for ADHD."

3. Jessica Schaaf: Developmental effects on decision confidence and learning from positive and negative outcomes

Learning to approach positive outcomes and to avoid negative outcomes are fundamental to adaptive behavior. Recent reinforcement-learning studies suggest these types of learning change across age. In some of these studies neutral outcomes are introduced to better separate the two learning types. Doing so, also increases ambiguity: Whereas neutral outcomes are bad compared to positive outcomes, they are good compared to negative outcomes. To disentangle the effects of outcome type and ambiguity, we administered a reinforcement-learning task to a sample of young adolescents and a sample of young adults in which we manipulated both outcome type and ambiguity. Using multilevel regression and computational modeling, we investigated the effects of outcome type, age and

ambiguity on learning and decision confidence. Preliminary results suggest learning to approach positive outcomes is easier than learning to avoid negative outcomes for both age groups. In addition, decision confidence seems higher after experiencing positive outcomes; especially for adults in an ambiguous learning environment."

4. Jan Boom: Development of the idea of chance

Thinking about chance is notoriously difficult. Theories about the development of such thinking are inconclusive. I propose a series of stages that represent development in thinking about chance. When people learn to understand better what chance is they go through these stages, but many people never do.

Stage 1 refers to children who have learned to appreciate unpredictability. They understand that it precisely the function of the dice to create an outcome that is not known; otherwise the game would not be 'fair'.

Stage 0 refers to younger children that have not a clue about chance: they have trouble discerning possibilities, and or have no idea that more possible outcomes imply lower chances per outcome.

Stage 2: some outcomes can be more likely than others. If there are no differences in likelihood (a coin), no prediction is possible, but if there are differences in probability, then some degree of prediction is possible.

Stage 3: beginning insight in how combining outcomes can be enough to make some outcomes more likely than others: combining can be the source of the seemingly spontaneous and natural emergence of differences in likelihood.

Several studies have been conducted to evaluate this developmental model. Children were presented with simple probability tasks (spinners, cards, beads, bins, coins, dice) over four weeks. The basic idea was that, even though no instruction or formal feedback is given, children might learn from working with the material and being asked questions. We found only marginal differences in average development between grades, huge inter-individual differences, and clear intra-individual progress over weeks."

5. Bonnie Brett: Studying probiotics and cognition in West Africa: Findings and lessons on cross cultural research

Despite work documenting links between probiotics and cognition in adults, this link in children is unexplored. This study was a semi-randomized controlled trial examining effects of a probiotic food supplement (called *dêguê*) on children's cognition. We hypothesized a positive association.

Participants were 270 five- to seven-year-olds recruited from two low-income schools in a West African city. Baseline tests were completed at enrollment, and outcome tests approximately five months later. After baseline testing, children from one school received either probiotic (n = 86) or control *dêguê* (n = 83) each day they were in school for 16 weeks. Children at the other school (N = 101) followed their diets as usual.

Attention and processing speed were assessed with a Cancellation task (e.g., Gauthier, 1989). Inhibitory control and cognitive flexibility were assessed using computerized versions of the Flanker and Dimensional Change Card Sort tasks (e.g., Eriksen, 1974; Monsell, 2003). Working memory was assessed with a Dot Counting game (e.g., Case, 1982) and selective attention was assessed using a Go/No-go task (e.g., Riccio, 2002).

Preliminary analyses indicate that children improved across time on all measures and that on some tasks (e.g., the Cancellation task), this depended on the quantity of product consumed in the probiotic

group only. Planned analyses in a multilevel framework will further examine time, group, and dosage effects.

We will discuss our findings in the context of current knowledge regarding probiotics and cognition, and with respect to the practical challenges we faced (e.g. teacher strike, child difficulties completing cognitive tests)."

6. Susanne de Mooij: Adapt to improve: Post-error slowing in a large scale online learning environment

The ability to monitor and adjust our performance is crucial for adaptive behavior, a core aspect of developmental changes. One widely studied metric of this capacity is post-error slowing (PES), reflecting the finding that humans tend to slow down their performance after making an error (Rabbitt & Rodgers, 1977). The notion of PES was generalised to a non-experimental setting, i.e. an online adaptive learning environment for practicing maths and language skills called Math Garden ("Rekentuin"). In a study, around 8 million response patterns were collected from 150.000 primary school students within 6 months. The findings show a general slowing down of the performance after making an error following greater accuracy. The characteristics of the game, i.e. time pressure and skill practiced also impact this association. In addition, we show how this adaptive behavior develops with age and ability of the student. I will argue that PES is not just a confound in simple repetitive reaction time tasks in a laboratory setting, but also reflects post-error behavior in an online learning environment, played daily by thousands of primary school students.

Tuesday 18 May	14:00 – 15:00
Flash talks (parallel session)	Breakout room F3

Topic(s): Social interaction

1. Stathis Grapsas: Climbing up or Falling Down: An Electromyography Experiment on Status Sensitivity in Narcissistic Children and Their Parents

Children's narcissistic personality traits may be rooted in a sensitivity to social status (i.e., prominence, respect, and influence in a social group). Testing this idea, a randomized experiment examined how narcissistic children and their parents respond to gains and losses of social status. On a simulated social media platform, children (N = 123, ages 8-13) competed with fictitious peers for status and were randomly assigned to gain or lose status. Unbeknownst to children, parents viewed the course of the task. Children's and parents' affective reactions during the task were measured with facial electromyography, which detects spontaneous facial muscle activity linked to positive affect (i.e., zygomaticus major activity, involved in smiling) and negative affect (i.e., corrugator supercilii activity, involved in frowning). Children with higher narcissism levels showed steeper increases in negative affect during status loss, and steeper increases in both positive and negative affect during status gain. Their parents mirrored these steeper increases in positive affect during their child's status gain, but they did not mirror the negative reactions. These results suggest that narcissistic children and their parents show intensified affective-motivational responses to status-relevant experiences of the children. These responses may be transmitted from one generation to the other (e.g., genetically or through parent-child socialization).

2. Matteo Giletta: Peer Victimization Experiences and Gene Expression Profiles during Adolescence

Adolescents who are exposed to peer victimization are at increased risk for mental and physical health problems, which could even perpetuate into adulthood. Unfortunately, current understandings of how peer victimization can pose such deleterious effects remain poor. This study aimed to address this research gap by examining the extent to which a history of peer victimization is associated with an altered gene expression profile that may have health consequences. Specifically, it was investigated whether adolescents exposed to peer victimization showed a gene expression profile characterized by increased pro-inflammatory activity and decreased antiviral and antibody-related activity (i.e., Conserved Transcriptional Response to Adversity, CTRA; Cole, 2019). Participants were 172 Dutch adolescents followed over the first two years of secondary school, in a four-wave longitudinal study. Peer victimization was measured at each assessment and genome-wide transcriptional profiling of RNA was assayed from dried blood spot samples collected at Time 4. A total of 361 gene transcripts emerged to be up-regulated as a function of peer victimization and 299 gene transcripts were found to be down-regulated (hypothesis-free analyses). Consistent with expectations, hypotheses-driven bioinformatics analyses revealed reduced activity of Interferon Response Factors in up-regulated genes (relative to down-regulated genes), indicating lower antiviral responses. However, contrary to hypothesis, up-regulated genes also showed reduced pro-inflammatory responses (i.e., NF-kB, AP-1). Altogether, results reveal a complex set of findings suggesting that adolescents exposed to peer victimization may display an altered gene expression profile, although this does not entirely align with the previously identified CTRA profile.

3. Tessa Kaufman: Are victims of bullying primarily social outcasts? Person-group dissimilarities in social, behavioral and physical characteristics as predictors of victimization

Myriads of studies have tried to explain why some adolescents are more victimized by others, focusing on individual characteristics. However, a sole focus on individual characteristics insufficiently considers the social function that bullying serves in the peer group and does not explain why for most youth bullying stops when they are placed in a different context. Instead, the person-group dissimilarity model seems a more parsimonious explanation for peer victimization, suggesting that deviating from group norms predicts being rejected by peers. Using the Group Actor-Partner Interdependence Model, this study examined whether being different from the descriptive classroom norms in terms of social (friendships, social media reputation), physical (pubertal development) and behavioral (anxiety, aggression), puts early adolescents at risk of becoming victims of bullying. Results from mixed Poisson regression models on 904 adolescents (M age = 13.2) from 57 classrooms indicated consistently that stronger person-group dissimilarity in friendships and aggression predicted increases in victimization. Having fewer friends when than the classroom norm – specifically when peers were more homogeneous in their higher number of friendships – or being more aggressive than the classroom norm predicted victimization. Overall, these results suggest that risk factors for victimization should be examined in light of the group context and not only on the individual level.

4. Vasiliki Kentrou: Co-occurring mental health conditions and potential misdiagnoses in men and women with late-diagnosed Autism Spectrum Disorder

Despite growing evidence of misdiagnosed mental health conditions in autistic adults, research attempting to quantify the extent of misdiagnoses is scarce. The present study examined the occurrence of (1) mental health diagnoses obtained before autism was diagnosed, (2) conditions co-occurring with autism following its diagnosis, and (3) possible misdiagnoses of mental health conditions. Participants provided information on mental health diagnoses predating their diagnosis of autism (N = 1019, 51.5% female), and mental health diagnoses co-occurring with autism (N = 1498, 53.2% female). When diagnoses were present prior to the autism diagnosis but were not reported as co-occurring conditions, these were identified as possible misdiagnoses. Results showed that 50.2% (N = 512) had at least one prior diagnosis, of whom 64.3% were women. Mood and personality disorders were the most frequent prior diagnoses. Results additionally showed that 57.7% (N = 864) reported having at least one diagnosis co-occurring with autism, of whom 59.8% were women. Mood and anxiety disorders were the most frequent co-occurring diagnoses. Moreover, 37.7% (N = 382) of participants had experienced at least one possible misdiagnosis, of whom 64.7% were women. Personality disorders were most frequently identified as possible misdiagnoses. The present study provides one of the first quantitative estimates of possible misdiagnoses of specific mental health conditions in autistic adults. Although current findings are tentative, they are in line with other research highlighting the risk of potential misdiagnosis in autistic adults, particularly women, by diagnostic overshadowing.

5. Stefania Vacaru: Five-year-olds' facial mimicry following social ostracism is modulated by attachment security

Social ostracism triggers an increase in affiliative behaviours. One such behaviour is the rapid copying of others' facial expressions, called facial mimicry (FM). In this study, we examined whether children's FM following ostracism is modulated by individual differences in the motivation to affiliate with others, as expressed in their attachment tendencies. Resistant and avoidant attachment tendencies are characterized by high and low affiliation motivation, and were hypothesized to lead to enhancement or suppression of FM towards an ostracizing partner, respectively. Following a social ostracism manipulation in which the children played a virtual game (Cyberball) with an includer and an excluder peer, FM of the two peers' happy and sad facial expressions was recorded with electromyography (EMG). Attachment tendencies were assessed with a parent-report questionnaire. The findings revealed that 5-year-olds smiled to both happy and sad facial expressions of the

excluder peer, while they showed no facial reactions for the includer peer. Neither resistant nor avoidant tendencies predicted mimicry responses to the excluder peer. Yet, securely attached children showed smiling-like reactions towards the excluder peer, both when the peer displayed happy and sad facial expressions. In conclusion, these findings suggest a modulation of facial reactions following ostracism by early attachment. This study advances our knowledge on social development and the role of early experiences for one's affiliation motivation.

6. Ilse van de Groep: Social evaluation, aggression regulation and psychopathic traits in persistent and desistant antisocial and typically developing young adults

Most people develop into socially adaptive members of society, but a small proportion of individuals develop persistent antisocial behaviors, which puts them at risk for various negative life outcomes. However, it remains unclear how their aggressive behavior in social contexts – and corresponding neural underpinnings – can be characterized in early adulthood, relative to that of people who desist or have no history of antisocial behavior. This is an urgent question as it has become increasingly clear that changes in brain function continue during this developmental period and investigating these changes may contribute to a better understanding of the persistence of maladaptive behaviors such as externalizing behaviors. Moreover, recent studies suggest that the frequency, severity and persistence of aggressive behavior in social contexts (e.g. following social rejection) is influenced by psychopathic traits. Hence, to further understand how behavioral and neural responses to social rejection are associated with different pathways to maladaptive social behavior, it is important to understand how individual differences in psychopathic traits explain behavioral and neural responses during social information processes. Therefore, in the current fMRI study, we will use the Social Network Aggression Task to examine (1) (the neural correlates of) aggression regulation following social rejection in young adults who either persist or desist in antisocial behavior (N = 55) and healthy controls (N = 40) and (2) test whether individual differences in psychopathic traits influence behavioral and neural responses to social rejection. Preliminary results show no behavioral differences in aggressive responses following social rejection between persisters, desisters and controls.

Tuesday 18 May	14:00 – 15:00
Flash talks (parallel session)	Breakout room F4

Topic(s): Culture, SES

1. Shuang Su: Is smartphone addiction a "real" addiction? A qualitative investigation

Background: Problematic smartphone use (PSU) has recently attracted a lot of attention, yet the definition of 'problematic behavior' is still unclear. While initial definitions of PSU were proposed several years ago, the constant evolvments of culture and technology may influence people's perceptions of PSU nowadays. In the current study, we aimed to qualitatively investigate PSU with consideration of updated studies (e.g. the cognitive impairments related to PSU) and cultural factors. Method: Participants were 24 Chinese university students and 27 European university students with a smartphone addiction scale-short version (SAS-SV) score above 40. They were interviewed using a semi-structured approach. Interviews transcripts were coded based on grounded theory to a) gain an in-depth understanding of PSU, and b) account for the possible cultural differences. Results: Preliminary analyses demonstrated that salience (e.g. thinking about one's smartphone when not using it), losing control (e.g. using one's smartphone longer than intended), withdrawal symptoms (e.g. getting irritated when there is poor/no internet connection), cognitive impairments (e.g. worse memory) and multi-functionality of the smartphone were commonly mentioned. In terms of cultural differences, Chinese university students commonly described their smartphone as a learning tool (norms, English); Further in-depth analyses will be performed focusing on similarities and differences with addictive behaviors, taking cultural differences into account. Conclusions: The results from this study could be used to establish a more comprehensive and current definition of PSU across cultures, providing an important first step towards our understandings of the mechanisms underlying PSU.

2. Willem Frankenhuis: Hidden Talents in Harsh Conditions

Although growing up in stressful conditions can undermine mental abilities, people in harsh environments may develop intact, or even enhanced, social and cognitive abilities for solving problems in high-adversity contexts (i.e., 'hidden talents'). We examine whether childhood and current exposure to violence are associated with memory (number of learning rounds needed to memorize relations between items) and reasoning performance (accuracy in deducing a novel relation) on transitive inference tasks involving both violence-relevant and violence-neutral social information (social dominance vs. chronological age). We hypothesized that individuals who had more exposure to violence would perform better than individuals with less exposure on the social dominance task. We tested this hypothesis in a preregistered study in 100 Dutch college students and 99 Dutch community participants. We found that more exposure to violence was associated with lower overall memory performance, but not with reasoning performance. However, the main effects of current (but not childhood) exposure to violence on memory were qualified by significant interaction effects. More current exposure to neighborhood violence was associated with worse memory for age relations, but not with memory for dominance relations. By contrast, more current personal involvement in violence was associated with better memory for dominance relations, but not with memory for age relations. This pattern of results, which supports a combination of deficits and 'hidden talents' is striking in relation to the broader developmental literature, which has nearly exclusively reported deficits in people from harsh conditions. The study does have several important limitations, which I will discuss.

3. Fangyuan Liu: The Autism-Spectrum Quotient Short Form (AQ-Short) in China and the Netherlands: A Cross-Cultural Comparison

Autism spectrum disorders (ASD) are widely recognized throughout the world. However, the expression, identification, and reporting of autistic symptoms may differ between countries. In this study, we compare the expression of autistic traits in large samples of children and adults (> 2000) from Western (the Netherlands) and Eastern countries (China), using the Autism Spectrum Quotient Short Form (AQ-Short). We aim to examine whether across countries (a) autistic traits are comparable; (b) sex has a universal effect, and (c) the factor structure of the AQ is similar. In line with previous research, we expect autistic traits to be reported more frequently in Eastern than Western countries, but a similar effect of sex. The underlying factor structures of the AQ-Short for each population will be derived and discussed. Data of these two populations are currently analyzed and preliminary results will be presented. Results will be discussed with regard to the global, universal versus culturally specific perspectives on autism.

4. Laura Doornkamp: Gender and ethnicity bias in teachers' grading

Previous research on grading bias shows that boys are systematically assessed more strictly than girls, a phenomenon known as 'the gender grading bias against boys' (e.g., Protivinsky & Münich, 2018). A similar bias is found against students with an ethnic background (Sprietsma 2013). Underlying mechanisms explaining grading bias remain speculative. In our study, we assess the role of implicit and explicit stereotypical beliefs of teachers-in-training on their grading practices. By manipulating the names above tests in a grading experiment, we empirically test the influence of student gender, ethnic background and the intersection of the two on the grading behavior of teachers-in-training in the subjects Dutch language and Mathematics (expected N = 200 for each subject). The role of implicit and explicit stereotypical ideas in grading bias is assessed through an implicit association test and additional questionnaires. The data collection is still ongoing, but we will be able to present our first results at the biennial VNOP (N = 100 for each subject). These results will provide insight in grading bias and the role of stereotypical ideas on grading behavior. The results support the development towards open and bias-free interaction, which includes grading, between student and teacher.

5. Yixin Tang: Children's domain-specific self-evaluations and global self-worth: A meta-analysis

Domain-specific self-evaluations (e.g., academic competence and physical appearance) have long been thought of as building blocks of global self-worth (James, 1890, 1963). Indeed, numerous studies have provided evidence for considerable overlap between domain-specific self-evaluations and global self-worth (e.g., Harter, 1986, 1999, 2012; Marsh, 1993, 2008; Arens & Hasselhorn, 2014). Yet, there is still little consensus on the strength of these associations across domains. Individuals differ in the extent to which they value and accentuate certain domains tethered to their self-worth, and it is usually these domains that contribute most to their global self-worth. Moreover, differences in cultural norms may result in divergent domain-specific self-evaluation bases for global self-worth. The goal of the present meta-analysis is to systematically aggregate the existing evidence on the association between domain specific self-evaluations and global self-worth, and test cultural influences. In doing so, we focus on middle to late childhood, the time when global self-worth first emerges. The cultural index of individualism (Hofstede) is used as an indicator of culture. Data were analyzed in a three-level meta-analytic models. In total, 145 independent studies were included, reporting on 596 effect sizes. The associations between domain specific self-evaluations and global self-worth varied across domains, with the strongest association appeared for physical appearance ($r = 0.640$), followed by behavioral conduct ($r = 0.546$), peer relations ($r = 0.526$), academic competence ($r = 0.498$), athletic competence ($r = 0.404$), and parent relations ($r = 0.391$). However, these associations did not depend upon the cultural index of individualism. Results provide insight into the self-evaluation domains that matter most to children's global self-worth. Although more cross-cultural research on the bases on global self-worth is needed, the results of this meta-analysis suggest cultural similarity more than cultural difference.

6. Tessa van de Rozenberg: Gender and Sexuality Messages in Dutch Textbooks

In this study, we examined 1) gender and sexuality representation, and, 2) gender stereotypes in Dutch language and math textbooks for the first year of secondary education in the Netherlands (ages 12-13 years). All Dutch educational publishers contributed to this study by donating relevant books to the research team. We analyzed all male and female characters in 17 math textbooks and 13 Dutch language textbooks (n=11.938). Results showed that, in line with our expectations, female characters are systematically underrepresented (41%). Also, they are, on average, less often mentioned by their name or referred to compared to male characters. Additionally, we found subtle stereotypical patterns in gender roles of the characters. Male characters are relatively underrepresented in parental roles and household tasks compared to female characters in textbooks. On the other hand, female characters are relatively underrepresented in occupational roles, technical tasks, and among characters expressing disharmonious emotions and social-emotional behavior compared to male characters. Among both subjects, the characters belonging to the LGB community are absent. Concluding, in line with theories of the hidden curriculum, female characters are underrepresented in both subjects and LGB characters are absent. Furthermore, in line with theories of the hidden curriculum, textbooks include subtle stereotypical patterns regarding the division of social and occupational roles, and, emotional and social-emotional behavior among male and female characters.

7. Jellie Sierksma: When Helping Hurts: Children learn stereotypes from observing intergroup helping behavior

By the age of 6 years, children start to become familiar with and endorse societal stereotypes (e.g., Pauker, Ambady, & Apfelbaum, 2010). One fundamental question is how children acquire these stereotypes. Here we propose that one way in which children develop stereotypes is from observing that some groups receive more help than others. Using novel groups and animated videos, we examined children's inferences upon observing that some groups receive help whereas others do not. We show that children (4-6 years) think groups that receive help are less smart (n = 44) but not less nice (n = 45). As such, the inferences children made from observing differential helping were specific to a group's intelligence and not representative of a general inclination to view groups who receive help negatively. Moreover, children also generalized their inferences about relative intelligence to new group members (n = 55), suggesting children's inferences went beyond the specific group members involved. That children as young as 4 years make these inferences, before having received (much) formal schooling, is an especially important result and underlines how powerful observing differential helping could be in guiding children's view of social groups.

Tuesday 18 May

15:15 – 16:30

Symposium (parallel session)

Breakout room S4

Symposium title: Practicing what makes you feel good: The interplay between motivation and performance in STEM

Chair: Maien Sachisthal

Discussant: Brenda Jansen

Symposium abstract: Achievement, emotions, motivation, and practice may continuously influence each other: achievement feeds students' sense of control, which contributes to emotions that may encourage practice, affecting future achievement. In this symposium, we present studies in which learner profiles, which may arise through such influences, are investigated. The three studies are set in learning contexts associated with low motivation and effort, namely math and science; ideally, interventions to increase motivation should match these profiles. More specifically, person-centered analyses were used to distinguish groups of students who exhibit a similar interplay between motivation and performance. In the first study, the interplay of cognitive (e.g., intelligence) and motivational variables (e.g., curiosity) and performance is investigated within a science and technology unit of 5th and 6th graders (N = 78). Latent profile analysis and in-depth interviews (N = 24) were used to identify three learning profiles (Slim, Van Schaik, Dobber, Hotze & Raijmakers). In the second study, the interplay of perceived control and value, emotions and performance was studied in a high school math context (N = 384). Latent profile analysis distinguishes students with a maladaptive profile (e.g., negative emotions, low performance) and students with an adaptive profile (e.g., positive emotions, high performance) (Sachisthal, Raijmakers & Jansen). In the final study, choice patterns were used to study self-regulation within a math-effort task in high school students (N = 299). Latent class analysis distinguishes four subgroups, such as avoiders (easy choice) and challengers (difficult choice) who also differed in mindset (Janssen, Nieuwenhuis, Altikulaç & van Atteveldt).

Speakers and presenters:

Tessa Slim: Mixed method analysis of individual differences in inquiry-based science learning

One of the obstacles for teachers in providing Science and technology (S&T) education for primary school students is coping with individual differences. In this study, the aim was to identify how student individual differences are related to the learning processes and achievement in S&T education. A S&T unit of four lessons regarding the concept of sound was implemented in six 5th and 6th grade classes (N = 78). Student individual differences that were measured were intelligence, executive functions (working memory and inhibition), coherence of speech, science curiosity and attitude towards S&T. Learning achievement was measured through a pre- and post-test regarding students' concept of sound and their inquiry skills. A factor score path analysis will be used to examine the relationships between the student individual differences and learning achievement. Learning processes were measured within a subsample (N = 24) through individual interviews, video-recorded lessons, and student worksheets. We used latent profile analysis to identify three profiles based on the student individual differences, from which the subsample for qualitative analyses was selected. Based on the results of the path analysis, the qualitative data

will be explored for further insights into how individual differences are manifested within S&T education. The results of this study can be used to determine how different types of students succeed or struggle within S&T education. This is essential for teachers in order to differentiate their instruction and provide the most optimal learning conditions for each student.

Maïen Sachisthal: Fear or fun: State and trait profiles in mathematics learning

Reciprocal relationships are thought to play an important role in mathematics learning, coupling appraisals of control and value, academic achievement emotions and achievement. The current study investigated mathematics-learning profiles — which may occur due to such reciprocal relationships — of Dutch teenagers ($N = 384$; mean age = 12.88) from upper secondary school. The learning profiles included appraisals, emotions and achievement on two levels of conceptualization: a more stable trait-level and an activity-related state-level. We used a model-based cluster analysis to identify the mathematics-learning profiles. On the trait level, two profiles emerged: a moderate learning profile and a maladaptive learning profile. On the state level, three learning profiles emerged: an adaptive, a moderate (anxious) and a maladaptive (bored) learning profile. Profile membership across levels was related, but not perfectly: Learners in the moderate trait learning profile were most likely in the adaptive state profile, whereas learners in the maladaptive trait profile were most likely in the moderate (anxious) state profile; the same proportions of learners from both trait profiles belonged to the maladaptive (bored) state profile. Results of the person-centered analyses provide an indication of how the pattern of associations of appraisals, emotions and achievement may result in different learning types across learning contexts.

Tieme Janssen: Individual differences in self-regulation during the math-effort task

Mahatma Ghandi once said “satisfaction lies in the effort, not in the attainment, full effort is full victory”. Although such attitude is commendable, it is quite understandably not found in all students. The ones who have it, though, might have different implicit beliefs about themselves. Seminal work by Carol Dweck (1988) on theory of intelligence (TOI) postulates that students with incremental beliefs (aka growth mindset) consider their intelligence as something that can be improved and developed by effort. Importantly, incremental ‘theorists’ show more adaptive self-regulation skills, such as setting learning goals (instead of performance), adopting mastery-oriented strategies (instead of helpless-oriented), and tend to focus on future expectations of success rather than negative emotions (Burnette, 2013). Although this research line has proven useful for educational practice, there is also a growing awareness that these effects are modest in size, more complex and variable among students. Therefore, we aimed to capture this variability in self-regulation, using the math effort task. High school students ($n = 299$) choose difficulty levels (1-5) of arithmetic problems at 20 time points after a baseline test. Latent Class Analysis was used to identify different choice patterns, revealing 4 subgroups: Avoiders (below baseline), Steady (at baseline), Challengers (above baseline) and Explorers (high variation). Challengers and Explorers more strongly endorsed the growth mindset and were more often male, while Avoiders and Steady endorsed fixed mindset. Challengers were more intrinsically motivated than Explorers. These preliminary results demonstrate distinctive patterns of self-regulation, adding more nuance to the growth versus fixed mindset dichotomy.

Tuesday 18 May

15:15 – 16:30

Symposium (parallel session)

Breakout room S5

Symposium title: A developmental perspective on forensic psychopathology: New insights on assessment, profiling and treatment

Symposium abstract: The current symposium presents a developmental perspective on forensic psychopathology in two ways. More specifically, the first two presentations provide new insights on psychopathic traits in youth, and the final two presentations offer new findings on the longitudinal development of treatment-related characteristics that might be important for adolescent and adult forensic patients (e.g., sex offenders). Research in adults has described different profiles of psychopathy in an attempt to delineate similarities and differences among constellations of psychopathic traits. Although such research in adolescents is limited, it is crucial as it can increase our understanding of youth psychopathic profiles and their associated risk/protective factors and etiology, as well as inform the development of tailored youth interventions. To assess these traits, the first presentation presents a new Flemish version of the Elemental Psychopathy Assessment (SF). The second presentation uses a person-centered approach in youth to delineate different profiles in terms of delinquent behavior, internalizing symptoms, substance use and victimization, also arguing that these profiles might be related to different etiological precursors. The third presentation then takes a longitudinal perspective on the development and change of risk and protective factors over time during the treatment of sex offenders. The final presentation corroborates on this, showing that the bi-directional effects of self-regulation and deviance (assessed 8 times between the ages of 10-12 and 30 years old) should be taken into account during treatment, as deviance has an effect on self-regulation in adolescence, and self-regulation has an effect on deviance in young adulthood.

Speakers and presenters:

Elien de Caluwé: Psychopathic traits in adolescence and adulthood: A validation of the Flemish Version of the Elemental Psychopathy Assessment Short Form

The Elemental Psychopathy Assessment (EPA; Lynam et al., 2011) is a self-report measure assessing the basic elements of adult psychopathy from a Five-Factor Model perspective. Given the need for a viable assessment tool of psychopathic traits when assessment time is limited, a short-form version of this instrument was developed (EPA-SF; Lynam et al., 2013). The present study corroborates on this research, addressing the psychometric properties of the Flemish version of the EPA-SF. Additionally, from a developmental perspective on psychopathic traits, this study explores the reliability, structure, construct and criterion validity of the EPA-SF in adolescents. A community sample of 440 Flemish adolescents (58% female; 14-18 years old) and 301 adults (84.40 % female; 19-57 years old) provided self-reports on the EPA-SF, the Externalizing Spectrum Inventory-Brief Form (Patrick et al., 2013) and the Reactive-Proactive Aggression Questionnaire (Raine et al., 2006). Adolescents also completed the Youth Psychopathic Traits Inventory (Andershed et al., 2002) and the Children's Social Behavior Scale (Crick & Grotpeter, 1995). Measurement invariance was investigated through multi-group exploratory structural equation modeling. The original 4-factor structure of the EPA-SF, including Antagonism, Emotional Stability, Narcissism and Disinhibition was replicated. Results provided support for full (i.e., strict factorial) measurement invariance across gender and age.

Intercorrelations between YPI and EPA-SF scales provided support for convergent validity, while meaningful, significant associations were observed between the EPA-SF scales and externalizing behavior including aggression. To conclude, the Flemish version of the EPA-SF can be considered a promising questionnaire for assessing psychopathic traits in both adolescents and adults.

Carlo Garofalo: Why Psychopathy Matters: Subtypes of Incarcerated Youth Show Meaningful Differences in Clinical and Risk Profiles

Psychopathic personality is defined by a constellation of interpersonal, affective, and behavioral traits. Theoretical and empirical work suggests that different variants (or subtypes) of psychopathy define groups of individuals who differ in etiological, clinical, and risk characteristics. However, most of these studies have been conducted in adults. The present study adopted a person-centered approach (i.e., latent profile analysis) to examine variants of incarcerated boys based on levels of psychopathic traits measured by the eight subscales of the Psychopathic Personality Inventory-Short Form (PPI-SF). This approach was applied on data leveraged from a large, representative sample of boys incarcerated in the United States ($N = 629$; $M_{\text{age}} = 15.49$ years, $SD = 1.23$). Results showed that over one-third of incarcerated boys had substantially high levels of psychopathic traits, and the presence of high levels of psychopathy was associated with a severe history of delinquency. More broadly, our findings supported traditional theories and contemporary perspectives on psychopathy variants. In particular, subgroups of boys characterized by different constellations of psychopathic traits had distinct profiles in terms of delinquent behavior, internalizing symptoms, substance use, and victimization. We argue that these different profiles might also be related to different etiological precursors, and may respond to different types of treatments.

Stefan Bogaerts: Positive development in sex offenders: Less risk and more protective factors in sex offenders from a network approach

Sexual offenders cause great damage to victims and society. The STABLE-2007 has been developed to assess and monitor changes in risk and protective factors, which implies both a strength- and risk-based approach in treatment (Andrews & Bonta, 2004; Willis, Yates, Gannon, & Ward, 2013). Therefore, we investigate dynamic risk factors of the STABLE-2007 and protective factors of the IFBE. Our study is longitudinal, in which we follow a group of 98 sex offenders (child molesters) and collect data every six months over a period of 18 months. We investigate whether there is, (1) a decrease in risk and an increase in protective factors, (2) a change in the strengths of bidirectional associations between risk and protective factors, and (3) a change in the centrality of risk and protective factors. To receive more insight into which factors (nodes) are the most important in the network at T1-T2-T3, we will perform centrality analyses with the bootnet R-package (Epskamp & Fried, 2017) to estimate the importance of risk and protective factors for the connectivity of the dynamic networks at the three measurement moments (Costantini et al., 2015). First results show that sex offenders show a growth trajectory during treatment and are able to develop in a positive way, which means more safety for potential victims. Over the three measurement moments, there has been a change in the centrality of risk factors (e.g., hostility, impulsivity) and protective factors (e.g., cooperation with treatment, coping skills). Some important risk factors lose central strength, while some protective factors actually gain central strength.

Eva Billen: Bi-directional associations between self-regulation and deviance

A lack of self-regulation is often seen as one of the main predictors of deviance. According to more traditional theories, such as the General Theory of Crime (Gottfredsson & Hirschi, 1990), relative levels of self-regulation are determined by the age of 10 and should not be influenced by any external factors. When looking at rehabilitation approaches, self-regulation is often targeted in order to decrease problematic behaviors or recidivism, showing a belief that self-regulation can be influenced by outside factors. The current research aims to not only look at the influence of self-

regulation of deviance, but also the influence of deviance on self-regulation at eight time points between the ages of 10-12 and 30 years old using a random-intercept cross-lagged panel model (RI-CLPM). Data from 772 participants of the Cedar study were used to run the analyses. Both uni-directional (self-regulation to deviance) and bi-directional models were tested. Results showed that a bi-directional model fit the data best, with deviance being an influence on self-regulation in adolescence, and self-regulation being an influence on deviance in young adulthood. There are several implications for theory and research, mainly that we may need to adjust our view of self-regulation as a driving factor, and further investigate the potential influences of deviance on self-regulatory processes.

Tuesday 18 May	15:15 – 16:30
Symposium (parallel session)	Breakout room S6

Symposium title: Teacher-student interactions and its effect on children’s executive function

Discussant: Mariëtte Huizinga

Symposium abstract: Executive function is an umbrella term for various cognitive processes that are central to goal-directed behavior, thoughts, and emotions. These processes are especially important in novel or demanding situations, which require a rapid and flexible adjustment of behavior to the changing demands of the environment. The development of executive function relies on the maturation of associated brain regions as well as on stimulation in the child's social contexts, especially the home and school. Executive function is pivotal for education, underscored by the importance of skills like goal setting, planning, and organizing in academic success.

Consequently, the focus in the educational field is shifting to classroom interventions targeting working memory. An important component of these interventions concern teacher-student interaction techniques (TSI). However, the embeddedness of different TSI techniques in these programs complicates the understanding of the contribution of the TSI to executive function performance. The aim of this symposium is to provide a systematic overview of, and to clarify working mechanisms of TSI techniques that affect executive function in preschool and primary school children.

Speakers and presenters:

Simona Sankalaité: Executive Function, Self-Regulation and Teacher-Student Interaction in Preschool and Primary School Children: A Systematic Review.

Executive functions (EF) and self-regulation (SR) are fundamental for children’s learning, school functioning and academic achievement. Core EF/SR skills rapidly develop in preschool and continue to develop throughout childhood. However, in general, EF/SR fail to develop to its full potential if the contextual stimulation is not adequately presented. Recent research has shifted the attention towards malleable environmental factors; more specifically, to the role of school and classroom environment as an important developmental context for promoting children’s EF/SR skills and, in turn, their cognition and behaviour. Numerous observational studies have shown a correlation between the quality of teacher-student interaction (TSI) at the dyadic or the classroom level and children’s EF/SR skills. To explore this association further and to provide more insight, the objective of this systematic literature review is to examine the causal effect of interventions that aim to improve children’s EF/SR with an added manipulation of the TSI. Generally, the results indicate that children in the intervention groups show higher gains in EF/SR compared to controls. More importantly, the findings reveal the largest effects of interventions in those performing most poorly at baseline, suggesting that the cognitive deficits can be minimised if children are supported appropriately. This review informs and highlights the need for more research (and interventions) explicitly investigating TSI and its potential influence on EF/SR in children. It aims to provide information as to which specific aspects of TSI need to be examined more closely; hopefully, instructing further development and implementation of lenient and effective interventions in education.

L. Vandembroucke: Keeping the spirit up: The impact of parent and teacher emotional support on working memory

Working memory, used to temporarily store and mentally manipulate information, is important for children's development and learning. It is therefore valuable to understand the development of working memory and which factors influence this development. The current study investigated whether parent and teacher emotional support promote working memory performance by buffering the negative effect of stress. An experimental design was used to examine this research question, in first and second grade children ($n = 170$, M age = 7 years 6 months, SD age = 7 months). Mild stress was induced in the children, followed by an audio message to manipulate parent and teacher support. Working memory performance was measured with a Corsi task before and after the stress and support manipulation. Questionnaires were used to assess children's perceptions of the teacher-student and parent-child relationship. Repeated measures ANOVA show that the effects of emotional support on working memory depend on the quality of the relationship with the parent and teacher. When children have a negative relationship with their parent (e.g., high conflict), a supportive message of that parent decreases working memory performance, while a supportive message from the teacher then increases performance. In sum, the current study suggests that, for some children, parents and teachers can promote working memory performance by being supportive for the child. Improving the parent-child and teacher-child relationship might be helpful for children with working memory difficulties.

S. Koskulu: The Effect of Teacher-Student Interaction on Children's Executive Function Development from Early to Middle Childhood

Executive function (EF) refers to higher-order cognitive processes which enable goal-directed actions, thoughts and emotions. Its development starts very early, continues until adulthood, and is subject to environmental input. Although previous studies demonstrated the effect of parenting on EF development, the influence of teacher behaviors is understudied. By spending time in (pre-)school, children become subject to many social rules and increasingly learn to regulate themselves as they grow older, for example, to meet course requirements. Some studies showed that certain aspects of teacher-student interactions (i.e., dependency of student to teachers) are related to EF development (i.e., working memory) of preschool children. However, how teacher-child interactions are associated with older children's EF development and whether the needs of children and dimensions of teacher-child interactions change over time is not explored enough. To this end, the current study aims to develop a theoretical model about which aspects of teacher-child interaction are important for EF development and how these aspects change across early to middle childhood.

In our prospective study, we plan to investigate the influence of teacher-student interaction on children's EF development from preschool to elementary school (aged between 2-12). We will examine the teacher-child interactions through video recordings and based on different aspects such as classroom organization, affective and instructional support of teachers at both classroom and dyadic levels. Further, we will examine whether characteristics of teacher-student interaction and children's need for EF development change across time. First suggestions for a coding scheme will be presented and discussed.

Tuesday 18 May

15:15 – 16:30

Symposium (parallel session)

Breakout room S7

Symposium title: How Meta-Analysis Can (and Cannot) Improve our Understanding of Parenting and Child Development

Symposium abstract: With an ever expanding literature, the need for sound systematic reviews and meta-analyses in developmental psychology has never been greater. Thorough literature reviews allow us to keep track of the field's main findings and developments. Meta-analyses are traditionally used to estimate an overall effect size (e.g., the strength of correlations or the magnitude of intervention effects). Novel meta-analytic techniques not only allow us to do this in more precise and robust ways, but also provide an opportunity to test methodological concerns and answer new questions: questions that can be answered only by merging data from multiple studies.

This symposium brings together scholars from two countries, multiple research groups, and three academic levels that use novel meta-analytic strategies to improve our understanding of the development of parenting practices and children's socio-emotional and cognitive development. The first two presentations use multilevel meta-analysis to examine whether there actually is a link between child-caregiver attachment and children's mentalizing abilities (Presentation 1), and to identify children's social skills training characteristics that predict intervention effectiveness (Presentation 2). The last two presentations use robust variance estimation to examine the promises of parenting programs to reduce harsh parenting in different countries around the globe (Presentation 3) and individual participant data meta-analysis to examine co-occurring change in parent and child mental health in parenting programs (Presentation 4).

In addition to discussing study findings, all presenters reflect on the promises (and perils) of using novel meta-analytic techniques to answer persistent and new questions on developmental psychology

Speakers and presenters:

Cristina Colonnese: Does attachment security predict children's thinking-about-thinking and thinking-about-feeling? A meta-analytic review.

Background: Previous research presents no clear picture of the association between caregiver-child attachment and the two hallmarks of children's mentalizing abilities: false-belief understanding (FBU) and emotion understanding (EU). The present meta-analytic study investigated four questions: (a) what is the pooled correlation between attachment and children's mentalizing abilities, as indicated by FBU and EU?; (b) are there differences in the magnitude of correlations between attachment and FBU on the one hand, and attachment and EU on the other hand?; (c) does children's verbal ability mediate the relation between attachment and children's FBU and EU?; (d) is the relation between attachment and children's mentalization moderated by the attachment assessment approach (behavioral vs. representational) and/or instrument?
Methods: A total of 64 effect sizes (N = 1,734 children) were subjected to multilevel analyses.
Results: The results showed that the association between attachment and EU, $r = 0.31$, was significantly larger than the association between attachment and FBU, $r = .19$. Language ability partially mediated the association between attachment and FBU, but not attachment and EU.

Studies using behavioral measures of attachment reported lower correlations compared to studies using representational measures.

Conclusion: The findings suggest that the association between attachment and FBU is indirect, and that methodological differences between the different attachment measures may partially explain the significant relations between attachment and children's mentalizing abilities.

Brechtje de Mooij: Effective components of social skills training programs for children and adolescents in nonclinical samples: A multilevel meta-analysis.

Background: Social skills training (SST) programs for nonclinical children and adolescents are known to have positive effects on social skills, but it remains unclear how distinct training components are related to program effects. This multilevel meta-analysis examines how psychoeducation (i.e., exercises aimed at the transfer of knowledge), psychophysical components (i.e., physical exercises aimed at improving self-confidence and trust in others), skill-building components (i.e., exercises aimed at improving interpersonal skills), and cognitive-emotional components (i.e., exercises aimed at changing emotions and cognitions) are independently related to SST program effects.

Methods: We extracted data from 97 articles describing 839 effect sizes. Training content data were extracted from 60 corresponding SST programs.

Results: SST programs had a positive effect on the development of interpersonal skills and emotional skills in nonclinical samples: $d = .369$, 95% CI [.292, .447], $p < .001$. This effect was positively influenced by the inclusion of psychoeducation and skill-building components. The inclusion of psychophysical components and the number of cognitive-emotional components did not influence program effects. For psychoeducation and skill-building components, we observed a curvilinear relationship between intensity and effect size: programs including three to six psychoeducational exercises yielded larger effect sizes compared to programs with more or fewer psychoeducational exercises, and programs with 11 to 20 skill-building exercises outperformed programs with more or fewer skill-building exercises.

Conclusion: These findings are an indication that psychoeducational components and skill-building components are related to larger SST program effects, granted that the dosage is right.

Sophia Backhaus: Can parenting interventions reduce parenting behaviour that places children at risk for child maltreatment? A systematic review and robust variance estimation meta-analysis.

Background. Child maltreatment has devastating consequences for child well-being and development. Parents are the main perpetrators, with over 80% of child maltreatment cases caused by parents and caregivers. Parenting interventions, specifically those that target social learning mechanisms, can be effective in decreasing child conduct problems and improving parenting behaviours. However, less is known about whether these interventions may also be effective in reducing harsh parenting and child maltreatment.

Objective. We aim to examine the effectiveness of parenting in interventions in alleviating the risk of child maltreatment globally across different populations and lengths of time.

Methods. We systematically reviewed and meta-analysed randomized controlled trials worldwide of parenting interventions based on social learning theory that include families with children aged 2-10. Our thorough search strategy yielded over 13,000 results. We will quantitatively synthesise included studies using robust variance estimation (RVE) meta-analysis. Unlike traditional meta-analysis, RVE allows for inclusion and synthesis of all estimated effect sizes simultaneously. Main outcome of interest is parenting behaviour that places children at risk of child maltreatment, such as harsh parenting.

Results. Our systematic search found more than 150 randomized controlled trials of parenting programs, in more than 30 countries. Meta-analysis is underway and will be completed in April 2020.

Conclusions and significance. This systematic review and meta-analysis is the first to evaluate the effectiveness of parenting interventions on reducing parenting behaviours that place children at risk for child maltreatment. We will discuss our findings in relation to study quality and policy implications for preventing child maltreatment.

Patty Leijten: Co-occurring change in children's conduct problems and maternal depression: Latent class individual participant data meta-analysis of the Incredible Years parenting program

Background: Children's conduct problems and parental depressive symptoms often co-exist whilst also augmenting each other. When parents participate in a parenting program to reduce their child's conduct problems, parental depressive symptoms may therefore increase or decrease depending on improvements, or lack thereof, in children's conduct problems. We aimed to (1) ascertain any co-occurrence of change in conduct problems and maternal depression; and (2) assess the impact of participation in a parenting program on this co-occurrence.

Methods: We integrated individual participant data from 10 randomized trials of the Incredible Years parenting program in Europe (N = 1,280; children aged 2–10 years). We distinguished latent classes based on families' baseline and posttest conduct problems and maternal depressive symptoms, using repeated measures latent class analysis (RMLCA) and latent transition analysis (LTA).

Results: Classes differed mainly in severity of conduct problems and depression (RMLCA; 4 classes). Conduct problems reduced in all classes. Depressive symptoms did not change in most classes, except in a class of families where conduct problems and depression were particularly severe. Incredible Years led to a greater likelihood of families with particularly severe conduct problems and depression moving to a class with mild problems (LTA; 3 classes).

Discussion: Our findings suggest that for the majority of families, children's conduct problems reduce, but maternal depressive symptoms do not reduce, suggesting relative independence. There seems one exception: changes did co-occur for the better in families with severe depression and severe conduct problems.

Tuesday 18 May**16:45 – 18:00****Pub Quiz****Main room**

Join us for drinks at the VNOP-pubquiz! Get to know your colleagues and their knowledge of celebrity development in a pubquiz especially made for our conference by professional quizmasters. Get ready for music rounds, picture rounds, puzzle rounds and – of course – question rounds!

Your pubquiz masters will give you all the details!



Wednesday 19 May	9:15 – 10:30
Symposium (parallel session)	Breakout room S8

Symposium title: The Role of Motivation in Aggression and Status among Peers

Symposium abstract: The link between popularity and aggression has been clearly established. Multiple proposed explanations for this association involve a focus on motivation and goals. The current symposium aims to bring together studies that focus on aggression and motivations, each examining this topic from a different angle.

The first study examined reactive and proactive motivations for aggression in 3 samples.

They identified 3 distinct subtypes using latent profile analysis, and compared the subtypes on a set of behavior and status variables.

The second study examined the longitudinal association between reactive and proactive aggression and popularity status. Proactive aggression had universal benefits for gaining and maintaining popularity, whereas reactive aggression had differential costs.

The third study focused on status and affection goals and their association with aggressive behavior. In older adolescents and the general population, status goals were only associated with aggression when affection goals were weak.

The fourth study focused on popularity approach and unpopularity avoidance goals on the explicit and implicit level, and related them to bullying participant roles and own popularity status. One result was that assistants and reinforcers were characterized on the implicit level by popularity approach goals, but only when they were low in popularity.

Together these studies provide more insight into whether different motivations for aggression can coincide (study 1), and predict popularity over time (study 2). They also show that the association between status goals and aggression only exists under certain conditions (low affective goals in study 3; having low popularity in study 4).

Speakers and presentations:

Anouk van Dijk: Do reactively and proactively aggressive subtypes of children exist? A confirmatory latent profile approach in three independent samples

This study examined whether there are distinct subtypes of children with reactive versus proactive motives for their aggressive behavior. We extended previous research by (a) using a person-based analytical approach and (b) using data from a questionnaire assessing children's motives independently from the severity of their aggression (the IRPA; Polman et al., 2009). Two competing hypotheses were tested. The both subtypes hypothesis holds that both reactive and proactive subtypes exist, as well as a mixed subtype. The reactive only hypothesis holds that only reactive and mixed subtypes exist. Hypotheses were tested on three datasets: a community sample (n = 228, ages 10-13), a special education sample (n = 115, ages 8-13), and a psychiatry clinic sample (n = 123, ages 6-8). Confirmatory latent profile analyses revealed that the both subtypes hypothesis best fitted the data of all three samples. Most children fitted the reactive subtype (55.7-61.8% across samples). In the community sample, more children fitted the proactive subtype (24.1%) than the mixed subtype (18.0%), whereas in two clinical samples more children fitted the mixed subtype (22.0-33.9%) than the proactive subtype (10.4-16.3%). As a secondary goal, we aimed to validate these subtypes by comparing them on a set of variables that previous literature suggests discriminate between reactive and proactive aggression. Across studies, the subtypes only differed in expected directions on 8 out of 29 variables. Overall, results suggest that

reactively and proactively aggressive subtypes of children exist, but the relevance of distinguishing these subtypes warrants further research.

Yvonne H. M. van den Berg: The functions of aggression in gaining, maintaining, and losing popularity during adolescence: A multiple-cohort design

Previous studies indicated that proactive aggression may help to gain and maintain popularity, whereas reactive aggression may result in a loss of popularity (Prinstein & Cillessen, 2003; Stoltz, Cillessen, van den Berg, & Gommans, 2016). The question is whether this is true for all youth. We propose that prospective associations between popularity and functions of aggression depend on status already achieved. Data came from the Kandinsky Longitudinal Study, an ongoing study on identifying early adolescents at risk for social and emotional problems in secondary education. We analyzed 5 cohorts of 3-year longitudinal data from 1374 adolescents (49% male; age = 12.67 years Grade 7) in secondary education. Two linear mixed models were run to examine differences in proactive and reactive aggression over time as a function of popularity trajectories. Results partially confirmed our expectation. Specifically, adolescents who gained popular status or lost unpopular status increased their proactive aggression, whereas adolescents who lost popular status or obtained unpopular status decreased their proactive aggression, $F(12, 258.06) = 3.89, p < .001$. A more nuanced pattern of group differences emerged for reactive aggression. Adolescents who obtained or lost unpopular status changed in reactive aggression over time. Obtaining or losing popular status was not related to changes in reactive aggression, $F(12, 7151.75) = 3.09, p < .001$. Taken together, these findings suggest that proactive aggression has universal benefits for gaining and maintaining popularity, whereas reactive aggression has differential costs.

Sijtsema, J.J.: Antisocial behavior and the balance between status and affection goals in adolescence and adulthood

Previous studies have shown that status goals motivate direct forms of antisocial behavior. However, status goals have been studied mostly in isolation from affection goals. It is theorized that the means by which status and affection goals are satisfied change during adolescence and adulthood, which can affect antisocial behavior. This was tested in two studies. In the first study, we tested this in a pooled sample of (pre)adolescents ($N = 1,536$; 49% girls; ages 10-15) by examining associations between status goals and direct aggression and the moderating role of affection goals. As hypothesized, with increasing age, status goals were more strongly associated with direct aggression. Moreover, for older adolescents, status goals were only associated with aggression when affection goals were weak. In the second study, we tested links between status goals and various forms of antisocial behavior in adults from the general population ($N = 253$; 22% males; ages 18-67). Stronger status goals were associated with general antisocial behavior and workplace violence, when affection goals were weak. However, these associations were not moderated by age. Together, these studies support the notion that the association between status goals and antisocial behavior is contingent upon affection goals. In adolescence, there is also support for the changing relationship between status goals and direct aggression.

Lansu, T. A. M.: How own popularity and popularity approach and unpopularity avoidance goals relate to bullying participant roles

Striving for high status among peers is positively associated with aggression (Cillessen et al., 2014), however, avoiding low status may be another force driving children's behavior during aggressive situations. The current study therefore examines how children's explicit and implicit popularity approach and avoidance motivations are related to their role in their classroom's bullying dynamic. It is expected that bullying — and to a lesser extent also assisting and reinforcing — are related to stronger popularity approach goals, as bullying may be viewed by

adolescents as a way to gain or maintain popularity (Caravita & Cillessen, 2012). In addition, it is expected that children who facilitate bullying (assistants and reinforcers), do so because they want to avoid unpopularity.

Participants were 163 5th and 6th graders, who completed sociometric nominations regarding bullying involvement (bully, assistant, reinforcer, victim, defender, outsider; Salmivalli & Voeten, 2004) in their classroom. They also answered questions about their own popularity, explicit popularity approach and unpopularity avoid goals, and completed a popularity and an unpopularity Approach-Avoidance Task.

Although bullying initiation was unrelated to popularity goals, facilitating bullying was associated with stronger explicit popularity approach as well as unpopularity avoidance goals. Defending and being an outsider were associated with weaker explicit popularity approach and unpopularity avoidance goals. Implicit popularity approach goals predicted higher levels of bullying, assisting and reinforcing in those who see themselves as low in popularity. Addressing the motivation to avoid low status in youth reinforcing the bullying process could be a promising new direction for intervention efforts.

Wednesday 19 May	9:15 – 10:30
Teaching intervision (parallel session)	Breakout room Teaching

Chairs: Helle Larsen, Brenda Jansen, Julie de Vos

In the teaching workshop, we will explain and discuss problem-based learning (PBL): a method to connect lectures and tutorials, activate prior knowledge, increase student interest and promote collaboration between students. What are your experiences? What types of courses can use PBL and can it be implemented in online teaching?

Wednesday 19 May	9:15 – 10:30
Symposium (parallel session)	Breakout room S9

Symposium title: An integrative approach to prosocial development in the first two decades of life: Combining biological, neuroimaging, and environmental perspectives

Symposium abstract: The current symposium aims to elucidate the development of prosocial behavior (i.e., behavior that benefits others) in the first two decades of life. Although we know that prosocial behavior helps adolescents to navigate their changing social world successfully, much remains to be learned about how specific types of prosocial behavior, such as giving, cooperating, and trust and reciprocity develop over time. It remains unclear how this development is influenced by biological, neuroimaging, and environmental factors. This symposium integrates four lines of research which employ a wide array of methodologies to examine the development of prosocial behavior while covering a large age range (ages 7 - 19). We specifically focus on biological (i.e., genetics, hormones) and environmental factors (i.e., social context and observations during real time interactions) and brain function. This integration will address various unanswered questions concerning prosocial development, such as 1) do various forms of prosocial behavior show similar developmental patterns (e.g. linear, quadratic, positive, negative)? 2) how are these forms influenced by biological factors and the environment? 3) are prosocial behavior and associated brain regions influenced by overlapping genetic factors? 4) are different types of prosocial behavior processed in the brain in a similar manner, and 5) can we promote prosocial behavior through the popular leisure activity of playing videogames?

Speakers and presentations:

Mara van der Meulen: Genetic and environmental influences on structure of the social brain in childhood

Previous studies have shown that aspects of prosocial behavior are related to brain structure in adults, specifically for regions in the social brain network. However, little is known about the relationship between prosocial behavior and structure of the social brain in middle childhood, and to what extent this relationship heritable or environmentally influenced. We studied the relationship between prosocial behavior and social brain structures in a large twin-sample (N = 512, aged 7-9). We used a combination of the prosocial subscales of the Strengths and Difficulties Questionnaire and the My Child questionnaire as a measure of parent-reported prosocial and empathic behavior. In a sub-sample (N = 422) MRI scans were collected, and Freesurfer was used to extract estimates of surface area and cortical thickness for a-priori defined regions of interest (TPJ, mPFC, pSTS, precuneus). Our initial results show influences of genetics on parent-reported prosocial behavior (ranging from 48-62%). In addition, we found contributions of genetics to mPFC, pSTS and precuneus structure, and contributions of shared environment for TPJ. The precuneus shared genetically determined variance with empathic behavior, suggesting a genetic overlap in brain structure and empathic behavior. To conclude, our findings show different heritability influences for regions in the social brain network, as well as genetic contributions to prosocial behavior. These findings lead to a better understanding of genetic and environmental influences on brain development in relation to prosocial behavior.

Suzanne van de Groep: The neural correlates of giving in different social contexts in adolescence: unravelling the effects of age and gonadal hormones

Giving is a highly context-dependent form of prosocial behavior that is essential for forming and maintaining social relationships, which is an important developmental goal in adolescence. It has been recently suggested that prosocial behavior is driven by neural processing in social brain regions such as the ventral striatum and medial prefrontal cortex. This processing is thought to undergo important changes throughout adolescence, notably as a result of rising levels of gonadal hormones. However, there is currently little understanding of the mechanisms that drive context-dependent giving and how this is influenced by age and gonadal hormones. Therefore, the aim of this preregistered study was to unravel the unique effects of age and gonadal hormones on giving and its neural correlates in different social contexts across adolescence. Specifically, we manipulated the target of the donation (i.e., a friend or stranger) and whether participants were being observed (i.e., with a public and alone condition). Participants (N = 142, ages 9 - 18 years) performed a novel giving fMRI paradigm, in which they could make small (1, 2, or 3 out of seven coins) or large donations (4, 5 or 6 out of seven coins) to others in aforementioned social contexts. Preliminary results suggest that adolescents give more to friends than strangers and when being observed. On a neural level, results suggest that donation size and social context are processed in separable brain networks. Next, we will investigate the differential influences of age and gonadal hormone levels on context-dependent giving and its neural correlates.

Marieke Buil: What Would Wendy Want? The Development of Social Mindfulness in Children

Living a social life requires knowing the needs and preferences of other people and acting on them. Previous research has shown that most adults exhibit this type of prosociality called "social mindfulness", a form of low-cost prosociality that has only begun to receive scholarly attention in recent years. It refers to being mindful of the needs and preferences of other people and giving others a choice. The question of how social mindfulness develops is however currently unanswered. The present research is a longitudinal study investigating the level and development social mindfulness within three consecutive age cohorts of 1,132 children between 8 and 12 years old. Furthermore, associations between social mindfulness and other forms of prosocial behavior and competence were explored. We found no gender differences neither in how socially mindful boys and girls are at age 8 (on average 40% made socially mindful choices) nor in their levels of growth over time (on average 3% increase each year). A larger increase in social mindfulness across ages 8-12 predicted a larger increase in high cost prosociality (sharing), general prosocial behavior, and social-cognitive emotional competence (theory of mind and emotion regulation) across ages 8-12. Together these findings add to the prosociality literature by showing that low-cost prosocial behaviors emerge as early as childhood, continue to develop across development, and potentially contribute to the development of high-cost cooperation and social cognitive emotional competence.

Imke Lemmers-Jansen: Neural correlates of social decision making in late-adolescence and early adulthood

Trust and reciprocity toward others have often been found to increase from childhood to adulthood. Adolescence is a key-period of change in social behavior, but gender differences in trust and reciprocity during this developmental stage have rarely been investigated. Here we investigate age-related gender differences in trust and reciprocity (N = 100, 51 female) and associated neural mechanisms (N = 44, 20 female) in adolescents aged 13 -19. Participants played two multi-round trust games with a pre-programmed cooperative and an unfair partner. Participants' investments were greater toward a cooperative than unfair game partner ($p < .010$), showing sensitivity to the degree of trustworthiness. There were no gender or age related differences in baseline trust. In repeated cooperative interactions younger adolescents showed slightly steeper increase of

investments than older adolescents. In unfair interactions, younger males reacted with stronger decrease of investments than older males. Analysis of brain areas associated with mentalizing, reward learning, conflict processing, and cognitive control revealed gender-by-age interactions, showing stronger influence of age in males than in females during cooperation, and the reverse in unfair interactions. Additionally, main effects of gender were found in the TPJ, with higher activation in males, and in the caudate, with females showing greater activation. In single and repeated cooperative interactions, adolescent males and females showed similar trusting behavior. Younger males showed stronger responses to unfairness. Gender-by-age interactions suggest differential development in mentalizing and reward related processes. Our findings suggest subtle gender and age-related changes in trust and cooperation during adolescence.

Wednesday 19 May	9:15 – 10:30
Symposium (parallel session)	Breakout room S10

Symposium title: Peer difficulties in youth with and without mild-to-borderline intellectual disabilities: Examining underlying factors and intervention effects

Symposium abstract: Children and adolescents who have difficulties with their peers, such as behavior problems, are at serious risk for the development of adverse outcomes later in life. Therefore, it is of great importance to identify underlying factors of these problems, such as emotion regulation difficulties and interpretation biases. In addition, there is a need for effective interventions to target these problems. This symposium addresses both. First, Eline Wagemaker will present her preregistered study, examining whether adolescents with mild-to-borderline intellectual disability (MBID) are more susceptible to peer influence than typically developing (TD) adolescents, and why this may be the case by examining three potential factors: inhibition, theory of mind and a negative interpretation bias. The second talk, by Eva Kühn, is on a pilot implementation-effectiveness study investigating an intervention designed to overcome MBID-related dysfunctions for youth with mild intellectual disability and behavior problems. The third talk, by Sophie Alsem, will focus on within-person changes in children's anger regulation and hostile intent attribution and whether changes in these mechanisms covary with within-person changes in children's aggression. Fourth, Lysanne te Brinke will present a micro-trial study, in which the effects of the treatment element emotion regulation training was examined among adolescents with externalizing problems.

Speakers and presentations:

Eline Wagemaker: Susceptibility to peer influence in adolescents with mild-to-borderline intellectual disability: Investigating links with inhibition, theory of mind and negative interpretation bias.

Adolescents with mild-to-borderline intellectual disability (MBID) show higher daily-life risk taking than typically developing (TD) adolescents, potentially due to higher susceptibility to peer influence. With the current preregistered study, we aimed to test whether adolescents with MBID are more susceptible to peer influence than TD adolescents as well as to explain why this may be the case by examining three potential factors: inhibition, Theory of Mind (ToM) and a negative interpretation bias. We assessed 163 adolescents (111 MBID, 52 TD; 14-19 years; 63.0% boys) on all constructs using a multi-method approach with experimental tasks, self- and/or teacher-reports. First, we found that adolescents with MBID and TD adolescents were highly similar on many domains: they did not differ in their susceptibility to peer influence, inhibition and negative interpretations, regardless of measurement method. On two of the four ToM instruments, adolescents with MBID showed weaker ToM than TD adolescents. Second, a structural equation model showed that inhibition, ToM and negative interpretation bias (as three latent factors) were not related to a latent factor of susceptibility to peer influence in adolescents with MBID. We conclude that adolescents with MBID are susceptible to peer influence, but not more so than TD adolescents, and that their susceptibility is not related to inhibition, ToM and negative interpretation bias. As adolescents with MBID are not less susceptible to peer influence than TD adolescents, and potentially more often get into peer influence situations, interventions should directly target this.

Eva Kühl: School-based intervention for youth with Mild Intellectual Disability and behavior problems: A pilot implementation-effectiveness study.

Behavior problems such as aggressive behavior and oppositional defiant behavior in childhood are related to severe problems later in life. Children and adolescents (from here on referred to as youth) with Mild Intellectual Disabilities and Borderline Intellectual Functioning (MBID) are at an especially great risk for adverse outcomes later in life. Developing effective interventions for these youth is of great importance to reduce behavior problems and prevent further escalation of negative outcomes. However, there is currently little knowledge on effective interventions for youth with MBID. Due to general cognitive deficits, limited attention span, limited working memory, executive functioning problems and limited abstract thinking in youth with MBID, specific adaptations to conventional therapeutic techniques are crucial to enable interventions to fit with the characteristics of youth with MBID. Therefore, in this ongoing pilot implementation-effectiveness study, we will conduct 1) a process evaluation of an intervention designed to overcome MBID-related dysfunctions, by investigating responsiveness (to the adaptations) and reach of the intervention, and 2) a preliminary test of the intervention's potential effectiveness to reduce behavior problems. Twenty-two youth (9-15 years old) participated in the study. Youth and the intervention facilitators reported on the intervention implementation process (i.e, responsiveness to the intervention and the adaptations) Teachers and youth repeatedly reported on youth behavior problems, which was analyzed using multiple-single case methods. (Preliminary) results of the process evaluation and potential effectiveness are discussed.

Sophie Alsem: Capturing mechanisms of change: Weekly covariation in anger regulation, hostile intent attribution, and children's aggression

Interventions for children's aggression typically target assumed underlying mechanisms, such as anger regulation and hostile intent attribution. The expectation here is that targeting these mechanisms will result in within-person changes in aggression. However, evidence for these mechanisms is mostly based on between-person analyses. The present talk will therefore discuss whether within-person changes in adaptive anger regulation and hostile intent attribution covaried with within-person changes in children's aggression. Children (N = 223, age 7 to 12) filled out four weekly reports to assess adaptive anger regulation, hostile intent attribution, and aggression. The psychometric properties of these novel measures were adequate. Results revealed within-person effects: weekly changes in adaptive anger regulation and hostile intent attribution covaried with changes in children's aggression. These findings support the idea that targeting anger regulation and hostile intent attribution in interventions may lead to changes in individual children's aggression.

Lysanne te Brinke: Emotion regulation training as a treatment element for externalizing problems in adolescence: A randomized controlled micro-trial

Improving interventions for externalizing problems in adolescence may require determining which treatment elements actually produce change. In this micro-trial, we tested a treatment element addressing one widely-hypothesized mechanism underlying externalizing problems: emotion regulation. We tested whether emotion regulation could be improved via training, whether adolescents who received such training would subsequently show reduced externalizing problems, and which training approach and sequence was most effective. We randomized 108 adolescents with elevated externalizing problems (71.3% boys, M age = 13.66, SD = 1.10) to a control condition or an experimental condition teaching emotion regulation through either a cognitive or behavioral approach, in alternated sequences. Effects of the modules were assessed before and after the modules, and with weekly assessments. The results showed a positive effect of the

experimental training on self-reported use of adaptive emotion regulation strategies. However, self-reported externalizing problems decreased more in the control condition than in the experimental condition. No mediation, approach (cognitive versus behavioral) or sequence (cognitive-behavioral versus behavioral-cognitive sequence) effects were found. These findings illustrate that change in a proposed mechanism may not be accompanied by change in targeted problems; this highlights the importance of testing the hypothesized impact of specific treatment elements on targeted mental health problems.

Wednesday 19 May	10:45 - 11:45
Key note (plenary)	Main room

Key note title: Adolescence as a window of opportunity for contribution to society

Speaker: Eveline Crone

Key note abstract: The dynamic brain development that takes place from childhood to young adulthood cooccurs with important changes in how young people relate to themselves and others. During this phase of their lives, young people develop relationships outside of the family context, they develop and alter their self-image, and they make a multitude of choices that have bearing on how they will continue their education, their profession, and their position in society. An important challenge for developmental science is to understand how these dynamic changes provide opportunities for young people to contribute to the societal challenges that the current generation faces.

Models of adolescent brain development have often suggested that the asynchronous development of reward-sensitive limbic and regulatory prefrontal brain regions results in a period of risk for disadvantageous outcomes. These models have often ignored that limbic contributions to rewards also provide opportunities for social adjustment, valuing collaborations and prosocial motivations. In this presentation, I will present data examining adolescence as a window of opportunity for giving, prosocial motivations, and ultimately, contribution to society.

Wednesday 19 May	12:00 – 13:00
General assembly (plenary)	Main room

Everyone is invited to the general assembly. In this meeting, members are informed about current matters within VNOP. Members can ask questions and put forward their own ideas. Regular matters are the financial situation of VNOP and future plans. The general assembly is also the place where changes to the statutes and new board members need to be approved by the members. Members can contact the conference organisation if they want to add items to the agenda: conference2021@vnop.nl

Wednesday 19 May	13:45 – 14:45
Poster session (parallel sessions)	Breakout room

Bonnie Brett**BOR P1****Birth-related pain, fatigue, and perceived trauma: Can regular maternal-infant skin-to-skin contact influence healing after delivery?**

In healthy infants, caregiver-infant skin-to-skin contact (SSC) is associated with positive health outcomes (e.g., Gray et al., 2000). In mothers, one study found that one-month post-birth, SSC mothers had fewer depressive symptoms and lower physiological stress than non-SSC mothers (Bigelow et al., 2012). We hypothesize that maternal physical health may also benefit. This study is a randomized controlled trial investigating whether daily SSC influenced maternal reports of pain, fatigue, and perceived birth-related trauma over time.

Participants were 116 healthy mother-infant dyads (56 SSC intervention; 60 control). Pain was assessed using two questions modified from the Medical Outcomes Scale SF-36 (Ware & Sherbourne, 1992), fatigue was assessed using the Multidimensional Fatigue Inventory (Smets et al., 1995) and perceived trauma was assessed using the Traumatic Experiences Scales - Birth edition (Wijma, 2012). Each were reported on 2-, 5-, 12-, and 52- weeks post-delivery. Mothers recorded SSC in a logbook.

Regarding pain and perceived trauma, no differences were found between SSC and control conditions, even using per protocol analyses (N = 16). Preliminary analyses regarding fatigue indicate that SSC mothers felt more fatigued at 12- but not 52-weeks post-delivery. Planned analyses incorporating fatigue from weeks 2 and 5 will examine this further. We will also examine clinical levels of birth-related PTSD as a moderator of intervention effects.

Preliminary results indicate that SSC between mothers and their healthy infants had no effects on reported pain or trauma over time but may have affected maternal fatigue. Finalized results will be discussed in term of clinical implications.

Shannon Yuen**BOR P2****Functioning within family systems and its relation with emotional functioning in deaf or hard-of-hearing preschool children**

Theoretical Background: Interacting with parents and other family members provide crucial learning opportunities for young children to develop their emotional skills. Little empirical research has examined the relations between children's development of emotion expression and recognition and the impact of family functioning, especially when pertaining to preschool ages and deaf or hard-of-hearing (DHH) children. This study examined the functioning of families with DHH children, including the emotional bonds between family members (family cohesion), the ability the family has in adjusting the power structure, roles, and rules for situational or developmental needs (family adaptability), and how parents communicate about emotions to their child; and their impact on children's emotion expression and recognition. Method: 112 DHH children and 95 typically hearing (TH) children aged 2 to 6 years and their parents were recruited by a rehabilitation and research centre for DHH children in China. Parents completed the emotion expression questionnaire (positive emotion expression, negative emotion expression, and emotion recognition subscales), the emotion communication questionnaire, and the family adaptability and cohesion evaluation scale. Results: Parent reports showed that DHH children expressed less positive emotions than their TH peers. For TH children, higher levels of family cohesion were associated with higher levels of positive emotion expression, whilst for DHH children, higher levels of family cohesion were related to lower levels of positive emotion expressions. For both TH and DHH children, higher levels of parent emotion communication were related to higher levels of negative emotion expression in children, and additionally, higher levels of family adaptability was found to be associated with higher levels of emotion recognition. Finally, increasing age was related to higher levels of both positive emotion expression and emotion

recognition in all children. Discussion: In conclusion, further research is needed to determine exactly what these initial findings convey for DHH children and their parents, how early can difficulties in emotional functioning be identified and when do they become a problem. Does age and increasing social-emotional development in DHH children decrease these symptoms, of which could exacerbate the struggles DHH individuals already face during adolescence and adulthood? Thus far, these results do highlight the struggles preschool DHH children face in emotional functioning and how the family plays a crucial role.

Timothy Houtman

BOR P3

Gut Microbes and the Development of BMI in the First 12 Years of Life

In the last decades, the worldwide prevalence of childhood obesity has reached epidemic proportions. Childhood obesity is accompanied by numerous short-term and long-term health consequences. Children who are obese tend to have increased risk factors for metabolic and cardiovascular conditions as well as a higher likelihood of psychological comorbidities during childhood and adulthood.

It has been firmly established that weight gain is caused by increase caloric intake as well as a decrease in physical activity. Lifestyle changes in recent decades, such as a transition to a poorer diet, have been deemed a driving force in the development of obesity and its consequences. However, other considerations such as biological, behavioral and environmental factors and their interactions also drive the obesity epidemic. Recent findings suggest that the microbial communities that inhabit the human gut may change the way in which food intake is processed and can differ between individuals. In order to improve understanding of the complex etiology of obesity, the current study aims to investigate the relationship between the composition of the gut microbiota and BMI during early and middle childhood in a longitudinal design. Identifying a potential mechanism and risk factor will be of importance in order to develop preventative strategies to tackle a global health epidemic.

Jana Runze

BOR P4

A bivariate behavioural genetics model of sleep and cortisol in middle childhood

Sleep quality has been found to be associated with cognitive functioning as well as emotional and behavioural problems. Past research indicated that sleep quality is also associated with cortisol levels throughout childhood and adolescence. Lower sleep quality seems to be related to higher (morning) cortisol levels as well as — in some studies — blunted cortisol curves over the day. Genetic factors may play a role in this context: Twin studies suggest heritability indices between 30% and 60 % for both sleep quality and cortisol level. However, to date behavioural genetic studies either investigated sleep quality or cortisol levels, but not both factors in relation to each other, even though sleep quality and cortisol levels have consistently been found to be related. Therefore, a pertinent question is whether the same or distinct genetic factors explain the variation in sleep quality and cortisol levels. In the current, preregistered study, a bivariate behavioural genetics model was employed utilizing the classical twin design which compares monozygotic and dizygotic twins to investigate the contribution of genetic and environmental factors on sleep quality, cortisol levels as well as their covariance. Existing data of 7-8 year-old twins (N = 872, Together-Unique study) was used. We measured sleep over four consecutive days using actigraphs. Sleep duration, sleep efficiency and wake episodes were used as indicators of sleep quality. Cortisol was measured three times a day over two consecutive days. Basal morning levels and area under the curve (AUC) were used in the analysis.

Emma Bolhuis

BOR P5

The biological embedding of a fast life-history strategy: telomere erosion and epigenetic aging as potential mediators between attachment insecurity, puberty onset and transgressive behavior.

Life history theory postulates that people who grow up in stressful early-life circumstances follow *faster* life history strategies than people who grow up in stable and resource-rich environments. These strategies are characterized by an emphasis on earlier reproduction. This prospective study set out to test the idea that less secure infant-mother attachment at 12 months of age is associated with earlier puberty onset and more child transgressive behaviours (callous-unemotional traits, risk-taking, and aggression) a decade later, which would facilitate the reproductive life task. Furthermore, this study tested whether biomarkers of accelerated aging, i.e. telomere length and epigenetic aging at age 6, mediate the proposed links. Longitudinal data from 193 children in the BIBO (Basal Influences on Child Development) project were analysed using structural equation modelling. No (in)direct effects of attachment insecurity on puberty onset or transgressive behaviour were found. This study did not find empirical support for the expected life history strategies, nor for an underlying biological mechanism. The lack of supporting evidence is critically discussed.

Nil Horoz

BOR P6

The moderating role of parental education and school level education on the effect of an universal preventive intervention on children's internalizing and externalizing problems

Background: Previous studies suggest that the Good Behavior Game (GBG), a universal preventive intervention, is effective in decreasing internalizing and externalizing problems. However, less is known about whether universal interventions are effective for all children or for specific subgroups of children. This study examined the moderating roles of parental education and school level education on the preventative effect of GBG on children's internalizing and externalizing problems. Method: Using a randomized controlled trial design (65% in GBG group, 35% in practice as usual group), 719 children were annually followed from kindergarten to second grade. Children's internalizing and externalizing problems were assessed by teacher reports. Parental education levels were based on the highest completed education level of the mother and father. School level education was based on the percentage score of all children with low educated parents per school. Main effects, and cross- and between-level interaction effects were examined using multi-level growth models. Results: There was a main effect of GBG on reducing the development of externalizing problems universally. Furthermore, GBG reduced the development of internalizing problems, but only in schools where most children had better educated parents. No individual-level moderation effects of parental education were found. Conclusion: GBG is effective in reducing externalizing problems universally however it is not effective in reducing internalizing problems in schools where most children have low educated parents. Results suggest that such schools may need additional resources or intervention components to prevent mental health problems.

Kayla Green

BOR P7

Emotional reactivity and wellbeing of adolescents during the COVID-19 pandemic

Adolescence is a formative period for socio-emotional development which is threatened by the COVID-19 pandemic. The current longitudinal study examined the impact of the pandemic on young people's mood, emotional reactivity, and wellbeing (i.e., operationalized as balancing needs of self and others). Hence, we conducted an online two-week daily diary study among 462 Dutch adolescents (Mage = 15.27 years, 64% females) and 371 young adults (Mage = 21.49 years, 81% females) in May 2020, with a follow-up to study long-term effects in November 2020 (N = 238 and 231, respectively adolescents and young adults). In May 2020, young adults and older relative to younger adolescents showed higher levels and more fluctuations in tension and depression and lower levels of vigor. This suggests that younger adolescents were struggling less during the first months of the pandemic, compared to the older adolescents and young adults. Vigor levels decreased and tension and depression levels increased between May 2020 and November 2020, especially for younger adolescents. Hence, the continuation of the pandemic is also affecting those who showed greater resilience in the beginning. A closer examination in the adolescent sample, revealed positive associations between instability of negative emotions (i.e. tension and depression fluctuations) and

the exposure to social and socioeconomic stressors (i.e. family stress and inequality of online homeschooling). Together, this study demonstrates vulnerability regarding young people's mood and emotional reactivity during the COVID-19 pandemic, especially for adolescents who experience more social and socioeconomic stressors.

Judith van de Wetering

BOR P8

Can we promote adolescents' pro-environmental behavior by harnessing their autonomy motive? – A controlled experiment

Adolescents can take the lead in mitigating the current environmental crisis. Still, they do not always act upon their environmental concerns (Marcinkowski & Reid, 2019; United Nations, 2015). To engage adolescents in sustainable change, it is important to understand pro-environmental behavior from the viewpoint of adolescent psychology. To this end, we propose and experimentally test, for the first time, the motive alignment hypothesis. This hypothesis states that adolescents will be especially driven to engage in pro-environmental behavior if they construe such behavior as directly relevant to motives for autonomy and status, which are salient during adolescence (Crone & Dahl, 2012; Yeager et al., 2018). In our study, Dutch secondary school students (N = 400, aged 13 to 18) are randomly assigned to one of four experimental conditions, wherein they watch a video on deforestation. In autonomy motive alignment conditions, the video presents pro-environmental behavior as an (a) autonomous expression of personal values or (b) opportunity to rebel against authority. In autonomy motive misalignment conditions, the video (c) presents pro-environmental behavior as mandatory, using prescriptive language, or (d) does not encourage pro-environmental behavior at all. Afterwards, participants can donate part of their financial reimbursement to environmental organizations and sign a petition addressed to a company that enables deforestation. We expect that participants in motive alignment conditions, compared to those in misalignment conditions, will donate higher amounts of money and will be more likely to sign the petition. Data collection will take place in spring 2021, but preliminary results will be presented.

Martina Zaharieva

BOR P9

Developing and validating eye-tracking measures of attention and emotion regulation in infancy: A longitudinal study

The way infants differ in employing the attention and emotion control mechanisms they acquire over the first year of life has been of primary interest to understanding, predicting, and even enhancing the developmental course of crucial later-life sociocognitive outcomes such as executive functioning. To study these developmental pathways, we use eye-tracking to obtain reliable and fine-grained individual-level measures of several basic endogenous attention mechanisms in a social versus a non-social setting. To overcome common challenges in studying fast-paced cognitive processes in preverbal infants, we designed novel tasks that, among other things, maximize engagement and control for stimulus luminescence, thereby allowing for the concurrent measurement of arousal fluctuations. In a longitudinal design, we assess whether individual differences in endogenous (joint) attention in early infancy persist into toddlerhood, and whether this variability translates to emotion regulation and other, more global forms of self-regulation. For this, we use age-appropriate protocols across three measurement waves. At 3- to 4-months (N = 140), we combine 1) eye-tracking measures of habituation, sustained and shifting attention with 2) micro-coded video measures of emotion and attention regulation during a semi-structured face-to-face interaction with the caregiver, and 3) broader-scale self-regulation measures at the level of temperament, sleep, and feeding, obtained via caregiver reports. At 12 and 18 months, we build upon the micro-coded emotion regulation with a head-mounted eye-tracking protocol in which we assess joint attention during a similar naturalistic play interaction with the caregiver. Multilevel modelling is used to assess point-in-time and longitudinal correlations among the constructs of interest.

Ingmar Visser

BOR P10

The Habituation Project, Part I: Design choices in infant habituation: A crowd-sourced systematic review and meta-analysis

The habituation paradigm is one of the most prominent methods for studying infant cognition. Experimental designs, protocols, and the extent to which these are reported vary greatly between studies. These methodological variations and lack of consistency in reporting practices substantially hinder the interpretation and generalisability of the outcomes from habituation studies. With the hope of devising a set of specific reporting guidelines for habituation studies and weighing the impact of otherwise potentially arbitrary methodological design choices, the present study addresses two primary goals. First, we map out experimental design choices used in habituation studies, including the habituation detection rule, and study the reporting practices used in this literature. In a follow-up meta-analysis, we assess the relationship between these design choices and the resulting effect sizes while controlling for covariates such as age. Following the PRISMA reporting guidelines, we perform a systematic review of the design choices and post-habituation measures used in habituation study samples aged 0-18 months, with a focus on the visual response modality literature (i.e., habituation experiments with looking time as the dependent variable). A total of 2,853 papers published in peer-reviewed journals between 2000-2019 were extracted from PsycInfo and Web of Science and screened by 6 raters (within an inter-rater reliability range of Fleiss kappa between 0.4 – 0.8), yielding 785 (27.5%) papers for results extraction. As a next step, we welcome researchers from various developmental research backgrounds to join our team as raters in a large-scale collaborative effort.

Elisabeth de Moor

BOR P11

Zooming in on the secondary school Transition: adolescent reasons for school choice

The transition to secondary school is an important moment in the lives of adolescents. For many adolescents, the transition is accompanied by a change in their mental well-being and educational adjustment. Some adolescents are set on persistent positive pathways, whereas others are put on more negative pathways, and experience increased psychological problems and decreased educational performance and motivation.

One factor important in understanding which adolescents have more difficulty with the transition, we may consider the person-environment fit of the adolescent and the school. In the process of choosing a school, adolescents may attempt to find a school that has the best fit with their own needs and interests. Following from this, adolescents who manage better in this process, may experience greater fit after the transition and thus, greater adjustment in the new environment.

In my poster presentation, I will present findings from a qualitative study (N = 252) examining what are aspects of schools that adolescents consider in the school choice process. I will share the distribution of codes across interviews and several particularly noteworthy findings. In addition, I will detail how the coding system was set up and applied to the interviews of adolescents in the last year of primary school. Finally, I will consider the reliability of the coding process.

Sophie Sweijen

BOR P12

Adolescents' prosocial actions during the COVID-19 pandemic: A longitudinal daily-diary study

In our preregistered study (see <https://osf.io/uf9dn/>), we tested the impact of the COVID-19 pandemic on opportunities for prosocial actions in adolescence, a formative phase for social development. Besides, we examined whether these prosocial actions affect adolescents' vigor levels during the pandemic. 888 adolescents (aged 10-18) and university students (aged 17-25) participated in our two-week daily diary study during the COVID-19 pandemic in May 2020 (T1) and November 2020 (T2). Participants reported daily on their prosocial support towards friends and family and vigor levels during the pandemic, and performed Dictator Games at both timepoints to assess giving directed to peers, friends and COVID-19 targets (medical doctors, COVID-19 patients, individuals with a poor immune system). Results from May 2020 showed that prosocial support directed to friends peaked in mid-adolescence, whereas prosocial support towards family members showed a gradual increase

from childhood to young adulthood. Overall, adolescents gave more to COVID-19 targets than to peers and friends. Daily prosocial support experiences to friends predicted giving behavior to all targets, whereas prosocial support to family was specifically associated with giving to COVID-19 targets. Preliminary results from both May and November 2020 showed that adolescents' prosocial support towards friends and family increased during this period. Moreover, adolescents with higher levels of vigor in May exhibited more prosocial support towards family in November, which resulted in an increase in vigor in November. Overall, our study sheds light on the importance of prosocial experiences during the formative years of adolescence.

Wednesday 19 May	15:00 – 16:15
Symposium (parallel session)	Breakout room S11

Symposium title: Social anxiety in adolescence: Exploring important symptoms observed in socially anxious youth and current treatment efforts

Symposium abstract: Social Anxiety Disorder (SAD) is characterized by marked anxiety about social situations, especially those in which one is evaluated by others. It is a highly prevalent disorder with lifetime prevalence rates ranging from 4% to 14%. SAD is considered a chronic condition with a median age of onset generally reported in early adolescence at the age of 13. Notoriously difficult to treat, previous research on treatment efforts continuously show lower remission rates for SAD than for other anxiety disorders. Yet, it can have detrimental impacts on essential areas of adolescents' functioning by negatively affecting academic successes, school attendance, and social competence but can also have more severe effects resulting in substance abuse and dependence, depression, and suicidality. It is therefore an important endeavor to further understand the disorder by reviewing both the subtle and profound symptoms of the disorder, as well as effective treatments. This symposium aims to do just that: our speakers come together from four universities across the Netherlands to present current research efforts. Throughout the talks, we will discuss mediating roles of cognitive biases in social anxiety disorder and the relationship between social anxiety and social status. Predictors of differences in treatment effectiveness for social anxiety will be explored. Moreover, we will present current ongoing research efforts on the effectiveness of new versions of already established treatment methods to answer the questions of how, and to what extent, low SAD remission rates can be boosted. Successes and challenges met along the way will be shared and discussed.

Speakers and presentations:

Lisan A. Henricks: The Longitudinal Interplay between Attention Bias and Interpretation Bias in Social Anxiety Symptoms in Adolescence

Social anxiety symptoms increase in adolescence. Cognitive models assume that attention bias (i.e. the attentional preference for negative cues in the environment) and interpretation bias (i.e. the tendency to negatively interpret ambiguous social situations) play an important role in the onset and maintenance of social anxiety. However, this relationship may be more complex as the Cognitive Combined Bias Hypothesis (CCBH; Hirsch, Clark & Mathews, 2006) argues that attention bias and interpretation bias do not operate in isolation, but rather interact with each other. The effect of both biases on social anxiety is assumed to be larger than the sum of its products. Experimental studies found evidence for the CCBH in adult depression and for social anxiety in children, but longitudinal evidence is missing. This study therefore aims to investigate the longitudinal interplay between attention bias and interpretation in social anxiety in adolescence. In total, 819 adolescents were followed over three years, from Grade 7 to Grade 9 of high school. Social anxiety was measured with a self-report questionnaire. Attention bias was assessed with a visual search task, and interpretation bias with ambiguous social vignettes. Cross-lagged panel models in Mplus are used to investigate the longitudinal relationship between attention bias, interpretation bias and social anxiety in adolescence, and to see whether the interaction effect between biases is larger than the separate direct effects of attention bias and interpretation bias on social anxiety. Results and implications will be discussed in this presentation.

Jeanine M.D. Baartmans: Predictors of differences in treatment effectiveness for childhood social anxiety disorder compared to other childhood anxiety disorders

Childhood anxiety disorders are in general treated with generic cognitive behavioural therapy (CBT)-programs (Hudson et al., 2015). Overall, research shows that these CBT-programs are effective in reducing childhood anxiety. Nevertheless, around 40% of the children remain having anxiety problems after treatment and recent studies show differences in treatment effectiveness between disorders. Especially children with a social anxiety disorder have poorer outcomes after CBT than children with other childhood anxiety disorders (e.g. Kodal et al., 2018). A better understanding of contributing factors to treatment effectiveness of childhood social anxiety is needed to improve treatment. The first goal of the study was to test if there were differences in treatment outcomes between children with a social anxiety disorder and children with other anxiety disorders in a Dutch sample. Since depressive disorders have a high comorbidity rate with anxiety disorders - especially with social anxiety disorder - (Essau, Conradt, Petermann, 1999), the second goal of the study was to investigate whether this comorbidity plays a role in the lower effectiveness of CBT for childhood social anxiety disorder than for other anxiety disorders. The final goal of the study was to investigate how parental anxiety was related to the (differences in) treatment effectiveness, since parental anxiety plays an important role in the aetiology and maintenance of childhood anxiety (Bögels & Brechman-Toussaint, 2006). Participants of the study were 152 children aged between 7 and 18 years old and their parents. Results and implications will be discussed.

Sara L.M. Jakobsson Mansson: Using blended care to treat social anxiety complaints in adolescents: A feasibility study

This pilot study, as part of a larger, ongoing research effort, aimed to investigate the feasibility of a blended care module in treating social anxiety in adolescents by adding access to an mHealth support app to attending a group-based cognitive-behavioral therapy program (Skills for Academic and Social Success; Masia Warner et al., 1999). The program consists of 12 of social skills training sessions in a group of age peers. The program gives much room for exposure exercises but also reducing negative cognitions. The sample consisted of three boys and four girls (N = 7) ages 15-17 years recruited from a high school. They met the DSM-V criteria for Social Anxiety Disorder, and this was their primary concern. Exclusion criteria were signs of suicidality and the presence of a developmental disorder. Participants were assessed pre and post-treatment and at a 3 month follow-up using semi-structured interview and questionnaires to assess their level of social anxiety, public speaking anxiety, depression, negative and positive cognitions, and self-perception. Eye-gaze behavior was registered using an eye-tracker during a public speaking exercise. Influences of variables such as gender, age, and therapist alliance were also examined. This pilot was an initial effort as part of a larger, currently ongoing trial which aims to establish to what extent blended care is a feasible method of offering treatment to socially anxious youth. This presentation aims to describe the successes and challenges faced in implementation, to present effects on outcome variables, and asks how to quantify feasibility within this protocol.

Rachel de Jong: Facing fears by focusing on thoughts, feelings and actions? A randomized controlled microtrial on the core components of cognitive behavioral therapy in treating speech anxiety in youth

Introduction: Youth with a diagnosis of SAD like speech anxiety have shown poorer outcomes after CBT than youth with other anxiety diagnoses. This emphasizes the need to optimize CBT for SAD in youth. A potential way to optimize CBT for SAD is to assess which components of CBT are

necessary for treatment success. The current study therefore aimed to evaluate the additional value of anxiety management strategies (AMS) including cognitive and relaxation strategies to exposure in the treatment of speech anxiety in youth. Method: Adolescents aged between 12-15 years with speech anxiety (N = 65; age 12-15; 42 girls) were included in this single-blind, randomized controlled microtrial comparing three parallel groups in a 6 week waitlist-intervention period design. After a baseline period, youth followed a short CBT training consisting of either exposure-only training or exposure combined with either cognitive strategies or relaxation strategies. Results: The data suggest that a short CBT training consisting of just five sessions can be an effective and efficient way to treat speech anxiety in youth. Overall, data suggests that exposure-only training was not more effective than a training consisting of a combination of exposure with cognitive or relaxation strategies. However, when zooming in on the specific dimensions of anxiety, data suggests that feelings of bodily tensions and threat beliefs concerning negative evaluation could be tackled more effectively in the exposure-only training. Conclusion: Especially in treatment settings where the average number of appointments is limited, the use of just exposure might be favored over the use of exposure in combination with other components.

Wednesday 19 May	15:00 – 16:15
Symposium (parallel session)	Breakout room S12

Symposium title: Positive developmental psychology: Towards a better understanding of well-being in individuals

Discussant: Loes Keijsers, PhD

Symposium abstract: A vast amount of research in developmental psychology is characterized by a focus on maladaptive mechanisms and outcomes, such as aggression or depression. However, this view does not entail the full continuum of individual functioning. A view on well-being besides maladaptive topics is needed, to better understand individual functioning. This symposium offers a synthesis of current research on positive developmental outcomes, including resilience to early stress and positive (emotional) well-being. The first study ($n=1,676$, $t=3$) focuses on positive individual characteristics which can decrease the negative impact of stress. More specifically, this study examines whether children's temperament traits and executive functioning skills contribute to resilience to early life stress. The second study ($n=329$, $t=4$) focuses on longitudinal predictors of maladaptive *and* adaptive functioning. The link between adolescent personality (development) and burnout symptoms and happiness in emerging adulthood was studied to determine whether variability in personality changes over time explain why some individuals are more likely to show (mal)adaptive functioning than others. The third study ($n=124$, $t=18$) focuses on the link between momentary parent-adolescent interaction and adolescents' well-being, using Experience Sampling. It highlights the influence of parent-adolescent interactions on subsequent adolescent well-being. These studies will illustrate the importance of examining strengths and positive outcomes in developmental psychology research. The papers are discussed by an expert in adolescent development, who will address individual differences in adolescent's resilience and positive development, as well as new designs to tap into the complexity of the underlying mechanism.

Speakers and presentations:

Donna de Maat: Early life stress and child behavior problems: Do child temperament and executive functioning contribute to resilience?

Introduction: It is well recognized that early life stress (ELS) increases the likelihood that children develop behavior problems. Moreover, early risk factors tend to co-occur, with cumulative risk factors consistently explaining more variance in children's outcomes than single factors. Fortunately, not every child exposed to ELS will develop poorly. Previous findings suggest that certain individual characteristics, related to temperament and executive functioning, may contribute to resilience to childhood adversities. However, it is still unclear to what degree *multiple* child characteristics contribute to resilience to *cumulative* ELS. Therefore, this study examined whether children's temperament traits and executive functions moderated the longitudinal association between cumulative ELS and behavior problems.

Method: In a population-based cohort ($n = 1,676$), parents reported on multiple stressors (e.g., stressful life events, socioeconomic disadvantage; age 0–6 years), child temperament (age 5) and executive functions (age 4). Teachers rated child internalizing and externalizing problems (age 7).

Analyses: Results showed that greater cumulative ELS was related to higher levels of subsequent internalizing and externalizing problems. Lower surgency buffered the association of cumulative ELS with externalizing problems and better shifting capacities with internalizing problems. Other child characteristics did not act as moderators.

Conclusion: These results support the growing consensus that protective factors may not be universal. Additionally, our findings underscore the importance of examining multiple interrelated protective factors simultaneously. We recommend future studies to examine the effects of cumulative ELS and multiple protective factors across families from different subpopulations.

Ildeniz Arslan: Nine Years of Personality Development as a Longitudinal Marker for Burnout and Happiness in Emerging Adulthood

Introduction: Emerging adulthood can be experienced as a stressful period because of instability and unsettlement. These stress experiences may develop into burnout symptoms if the stressors accumulate or become chronic over time. In contrast, others may thrive on challenges and develop into more happy individuals showing adaptive behavior. Personality might be an important factor explaining this heterogeneity in functioning. Although personality traits are relatively stable over time, there are important individual differences in personality development. Therefore, this study examined whether individual differences in personality development from adolescence to emerging adulthood were associated with burnout symptoms and happiness in emerging adulthood.

Method: At Time 1 (2009; $M_{age} = 15.7$ years), Time 2 (2012), and Time 3 (2015), participants ($N = 329$; 43.1% boys) reported on their Big Five personality dimensions: benevolence, extraversion, conscientiousness, emotional stability, and imagination. Burnout symptoms (exhaustion and disengagement) and happiness (life satisfaction and overall affect) were measured through self-reports at Time 4 (2018).

Results: Initial levels of extraversion, conscientiousness, emotional stability and imagination were negatively related to burnout symptoms. Initial levels of all personality dimensions were related to more happiness. Stronger increases in extraversion, emotional stability, and imagination over time, were related to lower scores on burnout symptoms and higher scores on happiness.

Conclusion: Results indicate that (changes in) personality can make individuals more vulnerable for developing burnout symptoms and other may promote happiness. The findings give new insights in the field of personality psychology, occupational psychology, and positive psychology for the study of personality (development) as longitudinal antecedents of burnout symptoms and happiness.

Anne Bülow: Quality of momentary parent-adolescent interactions and adolescent well-being – an experience sampling study

Introduction: Having a good relationship with one's parents, in terms of low levels of conflict and high levels of warmth, is associated with a benefit for adolescents' emotional well-being (meta-analytical evidence: Khaleque, 2013; Weymouth et al., 2016). However, to date, few studies are available on the short-term linkages between parenting and adolescent well-being (Boele et al, 2019). This study aimed at better understanding momentary processes that link parent-adolescent interactions to adolescent well-being.

Method: Adolescents ($N = 124$ $M_{age} = 15.80$, $SD_{age} = 1.69$) reported five to six times a day for 14 days on their positive and negative affect and parent-adolescent interaction quality in terms of parental warmth and parent-adolescent conflict. 2281 interactions with parents were rated in terms of parental warmth and parent-adolescent conflict.

Results: Preregistered Dynamic Structural Equation Models on 2,281 interactions revealed that parent-adolescent interaction quality and adolescent affect were associated within-family

concurrently (concurrently: $\beta = -.22 - .39$, over time: $\beta = -.17 - .15$), and between-families ($\beta = -.37 - .75$). Over-time associations differed between families.

Conclusion: The first results, confirm that quality of parent-adolescent interactions can predict adolescents' well-being in daily life. The need for individualized approaches to research and practice is discussed.

Wednesday 19 May	15:00 – 16:15
Symposium (parallel session)	Breakout room S13

Symposium title: Children's social adjustment

Symposium abstract: Social adjustment refers to the degree to which an individual engages in socially adaptive behaviors, coping with the society's standards, values and demands. A research priority in developmental psychology is the exploration of early social adjustment, because of its pivotal role in human social life and as a predictor of later maladaptive behaviors. Already in their first years of life, children manifest their social adjustment by displaying affiliative behaviors during preverbal interactions, expressing self-conscious emotions, acting pro-socially, and internalizing others' rules. Although prior research has emphasized the crucial role of social partners, such as parents and other people, in social development, little is known about the extent to which social partners influence children's social adjustment over development. The purpose of this symposium is to bring together a group of international researchers who share expertise in children's social adjustment, in order to discuss several aspects of the influences of parenting and other social partners, from diverse perspectives, using different methods, and different age groups. The first presenter describes the development of preverbal emotional communication with strangers, as compared to mothers and fathers, from age 4 to 8 months, and the contribution of infant temperament. The second presenter illustrates how 5-year-olds' facial mimicry following ostracism is modulated by early attachment security. The third presenter examined how young (3-4 years old) and older children's (8-10 years old) self-conscious emotions (i.e., embarrassment and pride) are modulated by the presence of other people. The fourth presenter discusses how maternal autonomy-related behaviors and child committed compliance at age 14 and 25 months predict internalization of rules and externalizing behaviors during the preschool years.

Speakers and abstracts:

Eliala A. Salvadori: Beyond the familial: the development of infant emotional communication with mothers, fathers, and strangers

Preverbal social interaction relies on infant temporal coordination of visual, facial, and vocal behaviors. Prior research has described infant emotional communication with mothers, and occasionally fathers, whilst less is known about infant communication patterns with unfamiliar partners. Yet, interaction with strangers is an essential component of social life from infancy onwards. This study investigated the development of infant communication with strangers, as compared to mothers and fathers, and examined the contribution of temperament. Fifty-eight families participated in the study at infant age 4 and 8 months. Infants were observed during three separate face-to-face interactions at the family's home. Behaviors were coded every second to characterize infants' gaze, facial expressions, and vocalizations. Parents reported on their infant's temperament on questionnaire. Results indicated that infant communication patterns with the stranger are concurrently and developmentally associated with their communication with mothers and fathers, yet infants produce fewer and shorter coordinated patterns of gaze, smile, and vocalizations with the stranger, as compared to both parents. This effect is present from 4 months and increases over development with mother (vs. stranger) whilst it follows a similar, but developmentally delayed, pattern with father (vs. stranger). Furthermore, infant communication

patterns were found modulated by both temperamental surgency and negative affectivity. In conclusion, these findings demonstrate the contribution of both individual dispositions and interactive factors in the development of infant emotional communication, endorsing the assumptions that it represents a characteristic feature of intimate and familiar relationships yet it gets reproduced when interacting with novel and unfamiliar partners.

Stefania Vacaru : Five-year-olds' facial mimicry following social ostracism is modulated by attachment security

Social ostracism triggers an increase in affiliative behaviours. One such behaviour is the rapid copying of others' facial expressions, called facial mimicry (FM). In this study, we examined whether children's FM following ostracism is modulated by individual differences in the motivation to affiliate with others, as expressed in their attachment tendencies. Resistant and avoidant attachment tendencies are characterized by high and low affiliation motivation, and were hypothesized to lead to enhancement or suppression of FM towards an ostracizing partner, respectively. Following a social ostracism manipulation in which the children played a virtual game (Cyberball) with an includer and an excluder peer, FM of the two peers' happy and sad facial expressions was recorded with electromyography (EMG). Attachment tendencies were assessed with a parent-report questionnaire. The findings revealed that 5-year-olds smiled to both happy and sad facial expressions of the excluder peer, while they showed no facial reactions for the includer peer. Neither resistant nor avoidant tendencies predicted mimicry responses to the excluder peer. Yet, securely attached children showed smiling-like reactions towards the excluder peer, both when the peer displayed happy and sad facial expressions. In conclusion, these findings suggest a modulation of facial reactions following ostracism by early attachment. This study advances our knowledge on social development and the role of early experiences for one's affiliation motivation.

Chris Riddell: Pride and embarrassment in children and adults: does audience presence matter?

Although previous studies have examined the emotions embarrassment and pride in childhood and adulthood separately, few studies have considered their developmental trajectories in a single paradigm. The present study examined the facial expression and physiological response associated with pride and embarrassment across the lifespan. Since both emotions are highly social, we also investigated whether the presence of an audience in the immediate environment modulated these responses. Three age groups participated: younger children (3.5-5.0yo), older children (8-10yo), and adults. In the embarrassment task, participants were asked to perform a short song. In the pride task, participants completed a puzzle which included bogus positive feedback. Video recordings of both tasks were played back to participants to elicit both emotions, while physiology (EDA/ECG/cheek temperature) and facial expressions were recorded. Half of the participants watched these videos in the presence of two audience members, whilst the other half watched these videos alone. Data collection is currently ongoing (current n=50). We hypothesize that adults will show more pride and embarrassment facial expressions, and a greater physiological hyperarousal response than both older and younger children, but especially so in the presence of an audience. Older children should similarly show more facial expressions, and a greater arousal response than younger children, but especially so in the presence of an audience. Preliminary analyses on the child facial expression data suggest that older children show longer facial displays of embarrassment than younger children, but similar levels of pride.

Shuyang Dong: Internalization of rules and externalizing behaviors in Chinese children:
Origins from committed compliance and autonomy-related parenting

Socialization factors combine with individual factors in carving social adjustment outcomes such as internalization of rules and externalizing behaviors. However, research gaps remain. Little is known about whether and how parenting behaviors and a child's behavioral characteristics predict these outcomes in Chinese families. Moreover, few studies have included both positive and negative parenting and both positive and negative outcomes (Slagt et al., 2016) when testing the person-by-environment developmental process.

The current study aims at addressing these gaps by examining how maternal autonomy-related behaviors and child committed compliance in toddlerhood predict internalization of rules and externalizing behaviors during the preschool years. Drawing from a longitudinal sample of 95 Chinese families, we coded maternal autonomy-supporting behavior and autonomy-suppressing behavior during free-plays at 14 and 25 months and toddlers' committed compliance in a cleanup task at 25 months. At 60 months, internalization of maternal rules and internalization of experimenter rules were measured by an internalized cleanup task and a cheating game task, respectively. Externalizing behaviors were reported on the Strengths and Difficulties Questionnaire. Results showed that for children with high committed compliance, autonomy-supporting behavior in toddlerhood positively predicted internalization of maternal rules. Conversely for children low on committed compliance, autonomy-supporting behavior in toddlerhood negatively predicted internalization of maternal rules whereas autonomy-suppressing behavior in toddlerhood predicted higher internalization of experimenter rules at 60 months and fewer hyperactivity problems at 60 months. This study revealed a complex interplay between early parenting and toddlers' characteristics in predicting social adjustment of Chinese children.

Wednesday 19 May	15:00 – 16:15
Symposium (parallel session)	Breakout room S14

Symposium title: Fathers are Parents Too!

Chair: Katrien Helmerhorst

Symposium abstract: During the last 50 years, fathers have become more and more involved in parenting. Although scholars have shown that breadwinning remains a strong component of the cultural conceptions of men's role in the family, this role is increasingly being complemented with a diversity of social roles; from gender role model to caregiver. However, most studies on parenting are still on mothers only. We would like to argue that fathers are parents too! Moreover, from a family systems perspective, the behavior of fathers, mothers and children are interdependent, and cannot be fully understood outside the context of other individuals in the family. The current symposium aims to advance our understanding of fathers as parents and consists of three empirical studies on parenting including both fathers and mothers and a theoretical paper on the importance of a system perspective in research on parenting and parenting interventions. The contributions to this symposium discuss different aspects of parenting and go beyond the traditional focus on the amount of time fathers spent with the child (i.e., involvement). The first contribution is a meta-analysis on the relation between maternal and paternal parenting behaviors and children's prosocial behavior. The second and third contribution zoom in on parental factors predicting the quality of caregiving and parenting behavior of mothers and fathers, specifically the role of cortisol and testosterone and parents' anxiety. The last contribution will discuss how maternal and paternal caregivers are not independent but are nested in a family system, and why this is important.

Speakers and presentations:

Lisa van der Storm: Mothers' and Fathers' Parenting Behavior in Association to Children's Prosocial Behavior: A Meta-Analysis

Prosocial behavior in early childhood is related to important developmental outcomes, including peer acceptance, school performance, and low levels of loneliness and aggression. Parents play one of the most (if not the most) important role in the development of prosocial behavior of children. Most of what we know about the role that parents play in promoting children's prosocial behavior is based on studies that solely included mothers. However, when researchers include both mothers and fathers, inconsistent findings regarding the associations between paternal and maternal parenting and children's prosocial behavior emerge. The aim of this meta-analysis was to synthesize the current literature on how parental behaviors of both mothers and fathers are associated with children's prosocial behavior, and study important moderators that could affect this association. In the present study Meta-Analytic Structural Equation Modelling (MASEM) is used, which enabled us to control for the contribution of the parenting behavior of the other parent within the same family. Moderator analyses were performed to test variation in effect sizes for different parenting dimensions (i.e., parental control, negative parenting, and positive parenting), for differences in child sex, child age, and study design. In total, 28 studies fitted the inclusion criteria and were analyzed. Preliminary results suggest that the parenting dimensions positive parenting and parental control are significantly positively associated to children's prosocial behavior, whereas this association was negative for negative parenting behavior. In addition, effect sizes

between parental behavior and children's prosocial behavior did not differ between fathers and mothers.

Peter A. Bos: Cortisol, Testosterone, and Maternal and Paternal Caregiving Quality.

Evolution has endowed humans with a neuroendocrine system that allows us to care for our offspring. This neuroendocrine system involved in caregiving has mostly been studied in mothers but is of equal importance in relation to paternal caregiving. In this presentation a short introduction will be given on the function of cortisol and testosterone in human caregiving. Furthermore, a study will be presented in which the quality of caregiving was observed during parent-child interactions in both mothers and fathers. The data show that in fathers, interactions between cortisol and testosterone are related to quality of caregiving both pre- and postnatally. Prenatally there was a stronger negative relation between testosterone and quality of caregiving in fathers with lower cortisol levels, and postnatally there was a stronger negative relation between cortisol and quality of caregiving in fathers high in testosterone levels. Furthermore, prenatal cortisol levels were related to paternal quality of caregiving during interaction with their own child. In mothers, no associations between quality of caregiving and our endocrine measures were observed. The current findings contribute to the growing literature on the endocrine antecedents of human caregiving behavior.

Mirjana Majdandžić: Severity of Fathers' and Mothers' Anxiety Disorders Predicts their Observed and Self-rated Parenting Behavior

Parenting behavior is an important factor in the intergenerational transmission of anxiety. Previous research has mainly focused on the links between parenting and child anxiety and less on the links between parental anxiety and parenting. Most research on these links addressed only mothers' parenting, and used a restricted age range in childhood. The current study aimed to explore how fathers' and mothers' severity of lifetime anxiety disorders predicts their parenting behavior across childhood. We hypothesized that more severe anxiety predicts poorer quality of parenting behaviors. A non-clinical sample of two-parent families ($n = 135$) was assessed at six measurement occasions. Severity of parents' anxiety disorders was measured using a clinical interview at a prenatal measurement and at child age 4.5 years. Parenting behavior was assessed using observations in multiple contexts and self-ratings at five child ages from early infancy to middle childhood (i.e., 4 months, 1 year, 2.5 years, 4.5 years, and 7.5 years). Multilevel models showed that overall, parents' anxiety disorder severity predicted less challenging parenting behavior (for fathers), more overprotection, more overcontrol, less warmth (for fathers), less responsivity (for fathers), more negativity, more permissiveness, and more harsh discipline (for mothers). Results were largely consistent for questionnaire and observational measures. There was little evidence of differential effects for sons and daughters, and of age differences. Parental anxiety disorders appear to widely affect their parenting behaviors, from early infancy to middle childhood. For fathers, more parenting behaviors seem to be affected by their own anxiety than for mothers.

Joyce Weeland: A Family Systems Perspective on Behavioral Parent Training: A Family is Greater Than "Some" of its Parts

Behavioral parent training (BPT) is effective in improving parenting behavior, and—indirectly—decreasing children's disruptive behavior problems. Because most participants in BPT practice and research are mothers, there is a growing call for inclusion of fathers. We would like to extend this call to inclusion of all involved caregivers and the family system. We argue that a family systems perspective may help strengthen prevention- and intervention programs targeting child development and may help us understand mechanisms of change underlying interventions,

suggesting that the family system may function as both a moderator and mediator. Moreover, a sole focus on fathers might unintentionally lead to a bias towards the nuclear, heterosexual family. This comes with the risk of excluding other important caregivers such as fathers in father-father or mothers in mother-mother families, grandparents, and caregivers in blended families. The family systems theory offers a relevant and inclusive theoretical framework to study the link between parenting and child development. We will therefore synthesize the theoretical foundations and empirical support for a family systems perspective on BPT and propose ways to apply a family systems perspective to BPT practice and research.

Wednesday 19 May	15:00 – 16:15
Flash talks (parallel session)	Breakout room F5

Topic(s): Social interaction

1. Iris Koele: Neural processing of performance feedback in the social context of peers across adolescence

Learning often requires processing feedback about the results of our actions. The feedback that children and adolescents receive at school can also have consequences for their peers, such as during a group assignment. However, few studies have examined feedback processing in the social context of peers. The current fMRI study investigated the neural correlates of feedback processing in a social context across three age groups (N = 85): pre-adolescents (9-11 years), young-adolescents (12-14 years) and mid-adolescents (15-17 years). In the scanner, participants performed the cannonball task in which they had to align a horizontally moving triangle with a square target, leading to performance dependent positive or negative feedback (i.e., monetary gain or loss). In the Solo condition, the participants performed the task alone. In the Social conditions they performed the task together with: i) their best friend who accompanied them to the scanning session (Social-Friend condition), and ii) an unfamiliar peer (a confederate; Social-Unfamiliar condition). The Social condition consisted of alternating mini-blocks of performing the task and observing the other peer perform, with shared consequences for the self and other peer. Preliminary findings showed higher activation in the striatum while participants received positive feedback in the Social conditions compared to the Solo condition, which might indicate higher rewarding or motivational value of positive feedback in social contexts. The results will be discussed in relation to its implications for learning in the social context of peers.

2. Andrik Becht: Beyond the average brain: Individual differences in social brain development are associated with friendship quality

Aim: Adolescence is considered a key period for the development of advanced social cognitive and high quality social relationships. Parallel to these psychosocial changes, massive structural brain changes occur in the social brain network (mPFC, TPJ, pSTS, precuneus; Mills et al., 2014), that is considered crucially involved in social cognition and social relationships. Prior work has largely focussed on average development which may have obscured meaningful individual differences in the speed of development in social brain regions (Foulkes & Blakemore, 2018). We therefore examined individual differences in social brain development, and predicted individual differences in the quality of best friend relationships. **Method:** To this end, 269 adolescents (Mage T1: 13.98 years) were followed across three biannual waves (T1-T3). Best friend relationship quality was assessed at T3. **Results:** Latent growth curve models revealed decreases in grey matter surface area and thickness in social brain regions across adolescence. However, our findings revealed significant individual differences in intercepts and slopes in social brain regions, that predicted relationship quality over time; Adolescents with higher mPFC surface area and cortical thickness intercepts and a faster decrease in mPFC surface area over time reported higher quality best friend relationships relative to other adolescents, whereas higher initial TPJ cortical thickness predicted lower quality best friend relationship over time. **Conclusion:** Our findings emphasize the importance to move beyond the study of average trajectories for structural social brain regions in adolescence. In doing so, our findings highlight possible developmental neurobiological markers of adolescents' social functioning in the peer context.

3. Reep Uysal: The relation between social anxiety and the perception of likability in adolescents: A longitudinal study

Social Anxiety Disorder (SAD) is one of the most frequent disorders among children and adolescents, but unfortunately, treatment effectiveness is relatively low. More studies are needed to examine the underlying mechanisms to be able to increase treatment outcome. Misperception of being less liked by peers may be an important underlying mechanism maintaining the anxiety. Indeed, previous studies have pointed out the link between likeability by peers and social anxiety in children finding that socially anxious children might undervalue their own likeability in comparison to children with lower levels of social anxiety. However, up to now, no study has addressed the relation of social anxiety and peer ratings of likeability over the time. This is important, as it provides more information on the pathways of anxiety versus perception. This study aimed (a) to replicate the results of previous studies, and (b) to examine the longitudinal association of symptoms of social anxiety and likeability. In total, 282 children were followed for two years from the moment they started high school (12 years of age). In three waves, they completed questionnaires to measure social anxiety, perceived likability and peer-reported likability. Cross-Lagged Panel Models (CLPMs) were used to extract within timepoint correlational effects, and between timepoint delayed effects between the 3 measurement variables. The results will be discussed during the presentation.

4. Martina Zaharieva: Validating the Baby FaceReader for facial expression analysis during face-to-face interaction in 3- to 4-month-old infants

Facial expressions are crucial to preverbal social interactions and among the earliest behaviours that can be used for inferring emotional states in infants. Recent developments in computer vision have brought about substantial advances in automatic facial expression analyses in adult data, yielding rich, reproducible results at a relatively low cost- and time-investment, in turn warranting further applications to infant research. The Baby FaceReader (BFR; Noldus, 2016) is one of few solutions that has been successfully applied to automatically classify facial expressions in infants older than 6 months, showing comparable results to anatomically-based manual coding. Among other important sociocognitive developments, however, face-to-face interactions with caregivers peak at 4 months. We compare the BFR model performance to manual coding in a pre-existing longitudinal dataset for which facial expressions of 52 infants at 4 months (156 videos) and 43 infants at 8 months (129 videos) during a naturalistic face-to-face interaction with three communicative partners were classified either as positive, negative, neutral, or not codable. We expect inter-rater reliability performance between BFR and manual coding on the proportion of time for which each facial category was classified to be comparable to that observed among two manual coders and across measurement waves. The signal-detection theory framework is used to quantify the prediction accuracy of the BFR classifier and the presence of misclassification biases, while controlling for relevant video characteristics. We provide a set of guidelines for improving the quality of video data collected during naturalistic observations and maximize the performance of automatic facial expression analyses.

5. Jiemiao Chen: Gaze avoidance during face-to-face conversations in socially anxious individuals: the effect of intimacy and conversational role

Eye-contact plays a crucial role in social interactions. Avoiding eye-contact has been implicated in the etiology and maintenance of social anxiety disorder. However, the evidence of gaze avoidance stems largely from studies where the facial stimuli are presented on computer screens or eye-gaze behavior is rated by human observers. Furthermore, recent evidence suggests flexibility of gaze behavior among high socially anxious adults from the general population (HSA) varying with the risk of receiving negative evaluation. Therefore, by using eye-tracking technologies, the current study aimed at unraveling the nature of gaze behavior adopted by HSA persons while they actually interact with others who are physically present and assessing the influence of social-evaluative threat and conversational role (speaking or listening). Twenty-five high and 25 low socially anxious female students (17 – 25 years) were selected based on the Liebowitz Social Anxiety Scale (LSAS score > 59 and < 30, respectively). Participants were asked to hold face-to-face conversations with same-sex confederates. Within the task, the participant and the confederate took turns in answering a set of questions and listening to each other's answers, while their eye movements were recorded using two

wearable eye-trackers. The questions vary in amount of intimacy (closeness-generating or small talk). The duration and number of fixations on eye regions of the confederate were measured. In this presentation, we present the preliminary results of the study.

6. Maud Hensums: Social goals and gains of adolescent bullying: A meta-analysis

Why do some adolescents bully? There is a long-standing debate on the motives that drive bullying in adolescence. Such knowledge is critical for the development of interventions to reduce bullying. We propose and substantiate a Social Goals and Gains Model of Adolescent Bullying. The model holds that adolescents who hold agentic goals (i.e., getting ahead of others), unlike those who hold communal goals (i.e., getting along with others), are more likely to bully peers. Such bullying, in turn, is expected to predict increased popularity but reduced likeability. To substantiate this model, we meta-analyzed data of 67,401 adolescents (mean age range 9,8 – 16,4), gathered in 48 studies with Meta-Analytic Structural Equation Modeling (MASEM). Results both support and refine our model: Adolescents' agentic goals were associated with higher bullying, which was, in turn, associated with higher popularity and lower likeability. There was no significant association between adolescents' communal goals and bullying. Together, these findings suggest that bullying is often driven by popularity goals and gains. We suggest that anti-bullying interventions should aim to change the means with which adolescents acquire agency and change peer norms that reward adolescent bullying with popularity.

7. Andrea Gradassi: High status peers promote prosocial behavior: experimental evidence from high school social networks

Research has shown that dispositions for prosociality undergo major changes during adolescence, a period of increased sensitivity to peer influence and incipient internalization of societal norms. However, the proximate mechanisms favoring the development of prosocial preferences are poorly understood. Here, we show that high-status peers strongly affect adolescents' prosocial decision making. Participants (N=106, 5 classrooms, age 11-17, 57% female) repeatedly chose to either donate money to a charity or keep it for themselves, and could revise their decision upon observing the (opposite) decisions of either a high-status or low-status peer from their classroom. Participants tended to conform to peer behavior (both generous and selfish), often reversing their initial preference. This pattern was especially strong when observing a high-status peer. Our findings suggest that high-status peers act as important signalers of prosocial norms, and can be instrumental for the diffusion of prosocial behavior. By using a novel incentivized paradigm in a naturalistic setting, we provide experimental evidence for the role of high-status peers in the development of prosocial preferences, and identify a potential path for interventions aimed at spreading cooperative norms.

Wednesday 19 May	16:15 – 16:30
Closing (plenary)	Main room

Closing and award ceremony by the organising committee

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